



# **NAVAL POSTGRADUATE SCHOOL**

**MONTEREY, CALIFORNIA**

## **THESIS**

**THE NATION THAT CRIED LONE WOLF:  
A DATA-DRIVEN ANALYSIS OF INDIVIDUAL  
TERRORISTS IN THE UNITED STATES SINCE 9/11**

by

Charles A. Eby

March 2012

Thesis Co-Advisors:

Robert Josefek  
Paul Smith

**Approved for public release; distribution is unlimited**

THIS PAGE INTENTIONALLY LEFT BLANK

<b>REPORT DOCUMENTATION PAGE</b>			<i>Form Approved OMB No. 0704-0188</i>	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.				
<b>1. AGENCY USE ONLY (Leave blank)</b>		<b>2. REPORT DATE</b> March 2012	<b>3. REPORT TYPE AND DATES COVERED</b> Master's Thesis	
<b>4. TITLE AND SUBTITLE</b> The Nation That Cried Lone Wolf: A Data-Driven Analysis of Individual Terrorists in the United States Since 9/11			<b>5. FUNDING NUMBERS</b>	
<b>6. AUTHOR(S)</b> Charles A. Eby				
<b>7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)</b> Naval Postgraduate School Monterey, CA 93943-5000			<b>8. PERFORMING ORGANIZATION REPORT NUMBER</b>	
<b>9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES)</b> N/A			<b>10. SPONSORING/MONITORING AGENCY REPORT NUMBER</b>	
<b>11. SUPPLEMENTARY NOTES</b> The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government. IRB Protocol number _____N/A_____.				
<b>12a. DISTRIBUTION / AVAILABILITY STATEMENT</b> Approved for public release; distribution is unlimited			<b>12b. DISTRIBUTION CODE</b> A	
<b>13. ABSTRACT (maximum 200 words)</b> <p>Lone-wolf terrorist attacks have occurred in the United States throughout the country's history. Attempted attacks from individual terrorists unaffiliated with terrorist groups may be becoming more prevalent. Both the general public and government officials acknowledge the presence and importance of these attacks; however, relatively little literature exists on the subject compared to group terrorism. Much of the information on lone wolves has been established by case study, inference, and known characteristics of group terrorism. The purpose of this study is to analyze the characteristics of lone-wolf terrorism through formal statistical models. The study then synthesizes data with case study and existing literature to formulate a base of knowledge for lone-wolf terrorism.</p> <p>This study demonstrates that no single dispositional profile of a lone-wolf terrorist exists. The individuals who engage in the tactic of lone-wolf terrorism form a unique ideology that combines personal grievances with common terrorist goals. Still, many lone-wolf cases exhibit certain characteristics. This thesis analyzes these characteristics and their relationship with successful attacks. These data on characteristics, goals, and motivations of lone wolves purport policies to increase engagement between the community and curb lone-wolf terrorism and its effects.</p>				
<b>14. SUBJECT TERMS</b> Lone Wolf, Terrorist, Terrorism, Statistical Analysis, Data, Lone Offender, Characteristics, Incentives, Motivations, Goals, Policy, Strategy, Individual			<b>15. NUMBER OF PAGES</b> 111	
			<b>16. PRICE CODE</b>	
<b>17. SECURITY CLASSIFICATION OF REPORT</b> Unclassified	<b>18. SECURITY CLASSIFICATION OF THIS PAGE</b> Unclassified	<b>19. SECURITY CLASSIFICATION OF ABSTRACT</b> Unclassified	<b>20. LIMITATION OF ABSTRACT</b> UU	

THIS PAGE INTENTIONALLY LEFT BLANK

**Approved for public release; distribution is unlimited**

**THE NATION THAT CRIED LONE WOLF: A DATA-DRIVEN ANALYSIS OF  
INDIVIDUAL TERRORISTS IN THE UNITED STATES SINCE 9/11**

Charles A. Eby  
Chief Planner for Emergency Preparedness, Office of Preparedness and Response,  
Maryland Department of Health and Mental Hygiene, Baltimore, Maryland  
B.A., Boston College, 2007

Submitted in partial fulfillment of the  
requirements for the degree of

**MASTER OF ARTS IN SECURITY STUDIES  
(HOMELAND SECURITY AND DEFENSE)**

from the

**NAVAL POSTGRADUATE SCHOOL  
March 2012**

Author: Charles A. Eby

Approved by: Robert Josefek, PhD  
Thesis Co-Advisor

Paul Jonathan Smith  
Thesis Co-Advisor

Daniel Moran, PhD  
Chair, Department of National Security Affairs

THIS PAGE INTENTIONALLY LEFT BLANK

## **ABSTRACT**

Lone-wolf terrorist attacks have occurred in the United States throughout the country's history. Attempted attacks from individual terrorists unaffiliated with terrorist groups may be becoming more prevalent. Both the general public and government officials acknowledge the presence and importance of these attacks; however, relatively little literature exists on the subject compared to group terrorism. Much of the information on lone wolves has been established by case study, inference, and known characteristics of group terrorism. The purpose of this study is to analyze the characteristics of lone-wolf terrorism through formal statistical models. The study then synthesizes data with case study and existing literature to formulate a base of knowledge for lone-wolf terrorism.

This study demonstrates that no single dispositional profile of a lone-wolf terrorist exists. The individuals who engage in the tactic of lone-wolf terrorism form a unique ideology that combines personal grievances with common terrorist goals. Still, many lone-wolf cases exhibit certain characteristics. This thesis analyzes these characteristics and their relationship with successful attacks. These data on characteristics, goals, and motivations of lone wolves purport policies to increase engagement between the community and curb lone-wolf terrorism and its effects.

THIS PAGE INTENTIONALLY LEFT BLANK



## TABLE OF CONTENTS

<b>I.</b>	<b>AN INTRODUCTION TO THE PHENOMENON OF LONE-WOLF TERRORISM.....</b>	<b>1</b>
A.	INTRODUCTION.....	1
B.	PROBLEM STATEMENT .....	3
C.	PURPOSE OF THE STUDY .....	4
D.	RESEARCH QUESTIONS.....	5
<b>II.</b>	<b>LITERATURE REVIEW .....</b>	<b>7</b>
A.	INTRODUCTION.....	7
B.	THE TACTIC OF DOMESTIC LONE-WOLF TERRORISM.....	8
C.	PSYCHOLOGICAL AND MOTIVATIONAL FACTORS.....	11
D.	MODELS, POLICIES, AND THE ABILITY TO PREDICT LONE WOLVES .....	16
E.	CRITIQUE OF LITERATURE AND CONCLUSION.....	18
<b>III.</b>	<b>METHODS .....</b>	<b>21</b>
A.	INTRODUCTION AND DATA COLLECTION .....	21
B.	UNIVARIATE ANALYSIS.....	25
C.	BIVARIATE ANALYSIS.....	26
D.	BINOMIAL DISTRIBUTION ANALYSIS.....	26
E.	CHARACTERISTIC COMPARISON .....	27
<b>IV.</b>	<b>ANALYSIS .....</b>	<b>29</b>
A.	UNIVARIATE ANALYSIS.....	29
1.	Quantitative Characteristics .....	29
2.	Time Characteristics.....	30
3.	Geographic Location and Area Characteristics.....	31
4.	Attacker Disposition and Personal Attributes .....	33
5.	Success and Mode of Attack.....	36
6.	Contact with Extremists .....	38
7.	The Internet.....	38
B.	BIVARIATE ANALYSIS.....	39
C.	BINOMIAL DISTRIBUTION ANALYSIS.....	41
1.	Binomial Distribution Tables.....	41
2.	The Relationship Between Lone-wolf Attacks and Other Characteristics.....	46
3.	The Relationship Between Successful Attacks and Other Characteristics.....	47
4.	The Relationship Between Travel and Other Characteristics.....	47
5.	The Relationship Between Employment and Other Characteristics.....	48
6.	The Relationship Between Attack a Person or Place of Interest and Other Characteristics.....	48

7.	The Relationship Between Being Born in the United States of America and Other Characteristics .....	49
8.	The Relationship Between an Attack Occurring on a Weekday and Other Characteristics.....	49
9.	The Relationship Between Reported Psychological Disorder and Other Characteristics.....	50
10.	The Relationship Between Contact with another Extremist and Other Characteristics .....	50
11.	The Relationship Between Casualties Occurring in an Attack and Other Characteristics.....	51
12.	The Relationship Between the Use of a Firearm and Other Characteristics.....	51
13.	The Relationship Between the Use of an Explosive Device (Bomb) and Other Characteristics.....	52
D.	BINOMIAL AND QUANTITATIVE CHARACTERISTIC COMPARISON.....	53
1.	Age Comparison.....	53
2.	Death Comparison .....	56
3.	Distance Traveled to Attack Comparison.....	57
E.	RESULTS .....	58
V.	DISCUSSION .....	61
A.	RESEARCH FINDINGS AND DISCUSSION.....	61
1.	Research Question 1: What Are the Characteristics of Lone Wolves, Their Plans, and Their Attacks .....	61
2.	Research Question 2: What Are Factors and Characteristics That Are Related to Success and Failure?.....	64
3.	Research Question 3: What Are the Incentives and Motivations for an Extremist to Choose the Lone-wolf Tactic? .....	65
4.	Research Question 4: Are Lone-wolf Attacks Random, Isolated Events? .....	66
5.	Research Question 5: What Policies and Recommendations Can Be Instituted to Reduce the Number of Lone-wolf Attacks and Their Effects?.....	68
B.	LIMITATIONS .....	70
C.	OPPORTUNITIES FOR FURTHER RESEARCH .....	71
D.	CONCLUSIONS .....	72
APPENDIX. SUMMARY OF LONE-WOLF CASES IN THE UNITED STATES OF AMERICA SINCE 9/11 .....		75
1.	September 2001—Bruce Ivens.....	75
2.	January 2002—Charles Bishop .....	75
3.	April-May 2002—Lucas John Helder .....	75
4.	July 2002—Hesham Mohamed Hadayet .....	75
5.	October 2002—Steve Kim.....	76
6.	March 2003—Dwight Watson .....	76
7.	March 2003—Eid Elwirelwir.....	76

8.	October-November 2003—Unknown (“Fallen Angel”) .....	76
9.	November 2003—Stephen John Jordi .....	76
10.	February 2004—Unknown.....	77
11.	October 2004—Demetrius Van Crocker .....	77
12.	October 2004—Ivan Braden .....	77
13.	May 2005—Unknown .....	77
14.	September 2005—Mahmoud Maawad .....	77
15.	December 2005—Michael Curtis Reynolds.....	78
16.	March 2006—Mohammed Reza Taheri-azar .....	78
17.	June 2006—Robert Weiler .....	78
18.	July 2006—Naveed Afzkal Haq .....	78
19.	September 2006—David Robert McMenemy .....	78
20.	December 2006—Derrick Shareef.....	79
21.	March 2007—Andrew Spencer .....	79
22.	April 2007—Paul Ross Evans .....	79
23.	September 2007—Houssein Zorkot .....	79
24.	October 2007—Unknown .....	79
25.	March 2008—Unknown .....	79
26.	January 2008—Michael S. Gorbey .....	80
27.	July 2008—Jim Adkisson .....	80
28.	August 2008—Timothy Johnson .....	80
29.	January 2009—Roderick Robinson .....	80
30.	January 2009—Keith Luke.....	80
31.	May 2009—Scott Roeder.....	81
32.	June 2009—Abdulahakim Mujahid Muhammed .....	81
33.	June 2009—James Wenneker Von Brunn.....	81
34.	September 2009—Hosam Maher Husein Smadi.....	81
35.	September 2009—Michael C. Finton .....	81
36.	November 2009—Nidal Malik Hasan .....	82
37.	February 2010—Joseph Stack .....	82
38.	April 2010—Sandlin Matthew Smith.....	82
39.	June 2010—Mark Krause .....	82
40.	July 2010—Byron Williams .....	82
41.	July 2010—Paul Rockwood, Jr.....	83
42.	September 2010—James Lee .....	83
43.	September 2010—Donny Mower.....	83
44.	September 2010—Sami Samir Hassoun .....	83
45.	October 2010—Farooque Ahmed.....	83
46.	November 2010—Mohamed Osman Mohamud .....	83
47.	December 2010—Antonio Martinez.....	84
48.	January 2011—Unknown.....	84
49.	January 2011—Kevin Harpham .....	84
50.	February 2011—Khalid Ali-M Aldawsari.....	84
51.	July 2011—Naser Jason Abdo .....	85
52.	September 2011—Rezwan Ferdaus.....	85

53. November 2011—Jose Pimentel .....	85
LIST OF REFERENCES.....	87
INITIAL DISTRIBUTION LIST .....	91

## LIST OF FIGURES

Figure 4.1.	Number of Lone-wolf Attacks by the Day of Week.....	31
Figure 4.2.	Lone-wolf Attacks by State .....	32
Figure 4.3.	Target of Lone-wolf Attacks.....	33
Figure 4.4.	Ideology of Lone Wolves.....	34
Figure 4.5.	Number and Percentage of Successful Lone-wolf Attacks by Year.....	36
Figure 4.6.	Weapon Used by Lone Wolf.....	37
Figure 4.7.	Number of Lone Wolves That Used the Internet by Year .....	38
Figure 4.8.	Distance Traveled by Lone Wolf to Attack by Age .....	40
Figure 5.1.	Number of Lone-wolf Attacks in the United States by Year.....	67

THIS PAGE INTENTIONALLY LEFT BLANK

## LIST OF TABLES

Table 3.1.	Data Collection Categories .....	23
Table 3.2.	Characteristics Analyzed Graphically.....	25
Table 3.3.	Bivariate Analysis Characteristics .....	26
Table 3.4.	Binomial Distribution Analysis Characteristics.....	27
Table 3.5.	Binomial Distribution Analysis Characteristics.....	28
Table 4.1.	Univariate Analysis of the Quantitative Characteristics of Lone-wolf Terrorists in the United States Since 9/11.....	29
Table 4.2.	Bivariate Analysis of the Quantitative Characteristics of Lone-wolf Terrorists in the United States since 9/11 .....	39
Table 4.3.	Binomial Distribution Analysis of Characteristics of Lone-wolf Terrorists in the United States Since 9/11 .....	43
Table 4.4.	Binomial Distribution Analysis of Characteristics of Lone-wolf Terrorists in the United States Since 9/11 .....	45
Table 4.5.	Comparison of Lone Wolves' Age (Years) to Binary Characteristics .....	54
Table 4.6.	Comparison of Number of Deaths Caused in Lone-wolf Attacks to Binary Characteristics.....	56
Table 4.7.	Comparison of the Distance Traveled by Lone Wolves to Attack (Miles) to Binary Characteristics.....	58
Table 4.8.	Themes of Lone-wolf Attacks in the United States Since 9/11 .....	59
Table 5.1.	Examples of Preventive Policies and Procedures to Reduce Occurrences of Lone-wolf Terrorism.....	69

THIS PAGE INTENTIONALLY LEFT BLANK



## **LIST OF ACRONYMS AND ABBREVIATIONS**

9/11	September 11, 2001
AQAP	al Qaeda in the Arab Peninsula
AWOL	Absent Without Leave
D.C.	District of Columbia
DHS	Department of Homeland Security
FBI	Federal Bureau of Investigation
GTD	Global Terrorism Database
IED	Improvised Explosive Device
IRS	Internal Revenue Service
NCTC	National Counterterrorism Center
POI	Person/Place of Interest
START	Maryland Study of Terrorism and Response to Terrorism
TSA	Transportation Security Administration
U.S.	United States

THIS PAGE INTENTIONALLY LEFT BLANK

## ACKNOWLEDGMENTS

I sincerely thank the Naval Postgraduate School Center for Homeland Defense and Security program, including the faculty, administrative staff, and my fellow classmates, for granting me the opportunity and teaching me the skills necessary to write this thesis. I have always believed that policy, strategy, and even logical discussion are most effective when rooted in fact and statistics—this study provided me an outlet to explore this belief within the exciting and timely subject of homeland security and lone-wolf terrorism. I was fortunate that my advisors Robert Josefek and Paul Smith shared my élan for the subject matter and method. Their expertise was vital in making this a coherent, consistent, accurate, and interesting study.

The support of the leadership and my colleagues in the Maryland Department of Health and Mental Hygiene Office of Preparedness and Response was essential. I especially appreciate the guidance of Sherry Adams, Isaac Ajit, Ivan Zapata, Artensie Flowers, and Al Romanosky.

Finally, I would be remiss not to specifically thank the people who care about me and my endeavors most. My friends and family have had the distinct pleasure and frustration of knowing me the longest amount of time. The unwavering support of my parents, Skip and Cindy, brother, Chris, and Amanda have been fundamental in completing this program, as well as working my way through life.

Other than the findings within the chapters of this thesis, my only other conclusion is that the people named in the previous paragraphs are patient, supportive, and extraordinary individuals.

THIS PAGE INTENTIONALLY LEFT BLANK

# **I. AN INTRODUCTION TO THE PHENOMENON OF LONE-WOLF TERRORISM**

## **A. INTRODUCTION**

Who's afraid of the big, bad [lone] wolf?

- Adapted from The Three Little Pigs (1933)

Beginning this thesis with a nursery rhyme belies the magnitude of the effect that lone-wolf style terrorism has had on the United States (U.S.). Many American citizens are able to visualize the unkempt, bearded face of “Unabomber” Ted Kaczynski, the army fatigue-clad Timothy McVeigh, and the haunting smile of Major Nidal Malik Hasan. These terrorists, like their brethren who constitute terrorist groups, such as al Qaeda, hold a permanent place in American history. Americans are afraid of the lone wolf.

Lone-wolf terrorism has occurred for a long time. Numerous cases of Russian anarchists assassinating political and popular figures in the nineteenth century abound (Kushner, 2003). Individuals planned and executed many of these attacks. The United States also experienced this form of terror throughout the twentieth century. Individuals who ideologically believe in white supremacy, far-right Christianity, or anti-abortion have conducted the majority of these cases. The term “lone wolf” has been credited to white supremacists who advocated using the tactic to bring about political change (Spaaij, 2010). These lone wolves may even believe they are acting as God’s “Phineas Priests.” Danny Davis (2010) writes that these terrorists deem that when “civil authority fails to execute righteous judgment, God has given [them] authority to execute judgment” (p. 5). Ironically, solo Islamist extremists may use a similar justification for their attacks. Right-wing terrorism and extreme Islam are ideologically opposed; however, both ideologies use religion to justify their actions.

Although the far right continues to be a concern in the United States, Islamist lone-wolf attacks in the United States have dominated national attention. In fact, these attacks may be becoming more prevalent. Since 2001, Muslim extremists have conducted

at least eighteen lone-wolf style attacks, which leads one to believe that Islamist extremists are encouraging lone-wolf terrorism in a “grassroots” effort to promote this view (Integrated Threat Assessment Center, 2007, p. 3). *Inspire* magazine, a glossy and digitally available publication geared towards inciting jihad in extremists, overtly promotes lone-wolf terrorism as an effective method against the western world (al-Suri, 2010).

U.S. officials have acknowledged the increased threat and frequency of domestic lone-wolf terrorism. In February 2011, U.S. Department of Homeland Security (DHS) Secretary Janet Napolitano announced to the U.S. House of Representatives Committee on Homeland Security that a primary threat was domestically radicalized individuals (Understanding the Homeland Threat Landscape—Considerations for the 112th Congress, 2011). She reiterated that these individuals would be ready, willing, and able to conduct terrorist attacks with little or no warning (Understanding the Homeland Threat Landscape—Considerations for the 112th Congress, 2011). The Heritage Foundation has shown that at least forty Islamist-inspired terrorist plots have been foiled since September 11, 2001 (9/11) in the United States (Carafano & Zuckerman, 2011). Lone wolves and small autonomous cells acting under their own instigation have conducted many of these attacks.

The diverse ideologies and types of lone-wolf cases experienced in the United States lead to an essential point—lone-wolf terrorism is a tactic, not a cause or ideology of its own. This thesis explores how the phenomenon of lone-wolf terrorism has changed in the United States since 9/11. Additionally, it attempts to decipher why the tactic is used and the incentives for using it. Lone-wolf attacks, attack attempts, and foiled plots are analyzed to identify salient traits and characteristics.

Terrorism is defined using Bruce Hoffman’s definition, which states that terrorism is “violence...or the threat of violence used and directed in pursuit of, or in service of, a political aim” (Hoffman, 2006, pp. 2–3). The lone-wolf tactic is a subset of terrorism. For the purpose of this thesis, a lone wolf is a person who attempts or succeeds in a terrorist act and who does the following.

- Plans and executes operations individually
- Does not receive instruction from an organized terrorist group or network
- Initially radicalizes without direct influence and recruitment from a terrorist group

It is clear that these terrorists exist and are a threat to the United States; however, an inadequate amount of information is available on lone wolves, which has led to a deficiency in the collective knowledge on this apropos subject.

## **B. PROBLEM STATEMENT**

Terrorist groups have been analyzed at great lengths since 9/11, which has not been the case with lone-wolf terrorism. It is possible that terrorism scholars have focused on group dynamics because terrorism is a phenomenon largely considered a collective activity (Instituut voor Veiligheids-en Crisismanagement, 2007). This belief is in direct contrast to the amount of media and political attention that has been directed towards lone-wolf terrorism. Quantitative studies have been conducted on group terrorism. These studies have found characteristics of group terrorism and conclusions regarding mitigation tactics (e.g., Jones & Libicki, 2008). A comprehensive statistical analysis has not been conducted on lone-wolf terrorism in the United States.

Domestic lone-wolf terrorists are typically unknown to law enforcement prior to conducting attacks and the nature of lone terrorist offenders makes it challenging to assign a singular theology to this classification of attacker. This lack of familiarity is troubling because domestic lone-wolf-type attacks may be becoming more prevalent in the United States. Federal Bureau of Investigation (FBI) Director Robert Mueller has stated that domestic lone-wolf style terrorism will increase. In 2003, Mueller said, “the threat from single individuals sympathetic or affiliated with al-Qaeda, acting without external support or surrounding conspiracies, is increasing” (War on Terrorism, 2003). In 2007, he added that he was particularly concerned about “lone wolf actor(s)...not tied in with any particular group overseas” (Confronting the Terrorist Threat to the Homeland: Six Years after 9/11, 2007). It is particularly difficult to prevent lone-wolf terrorist attacks because these actors plan and operate in isolation. It is difficult for law enforcement to detect them because they often radicalize without the direct influence of a

charismatic terrorist leader. Lone wolves rarely have any direct contact with terrorist group leaders and may radicalize using the anonymity of the Internet (United States Senate Committee on Homeland Security and Governmental Affairs, 2008).

Despite the number of attempts, little is known about lone-wolf terrorists because a large cadre of literature on this subject does not exist. Analysts have conducted case studies and reports on individual lone wolves; however, a quantitative statistical analysis of characteristics of lone-wolf attackers and their attempts at terrorism does not exist. This void results in an absence of factually based policy and strategy to curtail lone-wolf terrorism.

Effective policy can only be created after definitive characteristics of lone-wolf attacks are formed, which has not been accomplished at this time. Also, a need exists for analyzing which characteristics of previous attacks have been indicators of successful attacks. This analysis could include personal characteristics, such as age or level of education, planning processes, or tactics, such as weapon or target. A characterization of the motivations of lone wolves has not been conducted. Many of these attackers profess they are fighting for a cause, but, it is unknown why and who chooses the lone-wolf method instead of joining a terrorist group.

The scientific study of lone-wolf terrorism, like the discipline of homeland security, is in its infancy. A need does exist to synthesize current scholarly literature with statistical analysis to increase the collective knowledge on the phenomenon of lone-wolf terrorism.

### **C. PURPOSE OF THE STUDY**

The purpose of this study is to analyze characteristics of lone-wolf terrorists using statistical tests to bolster collective knowledge on this tactic in the United States since 9/11.



Since 9/11, there have been numerous lone-wolf style attacks and attempted attacks in the United States. Some policies and legislation have been developed to curb the tactic, but, these may have been developed as short-term solutions due to specific past cases of lone-wolf terrorism. Ineffective policy will continue to be developed if it is based on inferential conclusions found in a few cases of lone-wolf terrorism.

Quantitative, qualitative, and descriptive statistical analysis were used to examine data on lone-wolf terrorism in this thesis. The researcher compiled a list of lone-wolf attacks and attempts using existing, vetted databases. Information and characteristics were collected for each attack and attempt. These data were analyzed to identify characteristics found in a significant number of cases. Additionally, tests were conducted to find relationships between certain characteristics.

The synthesis of quantitative and qualitative analysis supports the discovery process in finding the best description of lone-wolf terrorism. This research may make apparent fundamental differences in the characteristics of lone and group terrorists. Additionally, gleaned information can be used to decipher the goals, motivations, and incentives of lone-wolf terrorists.

#### **D. RESEARCH QUESTIONS**

What patterns are present in the data on lone-wolf terrorists and their attacks?

- What are the characteristics of lone-wolf terrorists?
- What factors and characteristics are related to successful lone-wolf attacks?
- What are the incentives, goals, and motivations for an extremist to choose the lone-wolf tactic?
- Are lone-wolf attacks random, isolated events?
- What policies and recommendations can be instituted to reduce the number of lone-wolf attacks and their effects?

THIS PAGE INTENTIONALLY LEFT BLANK

## **II. LITERATURE REVIEW**

### **A. INTRODUCTION**

A recent surge in high profile lone-wolf attacks has occurred in the United States. The prevalence of these attacks and attempts has placed additional scrutiny on policies regarding these specific terrorists. Secretary of the Department of Homeland Security Janet Napolitano (2011) has stated that individual terrorism is an increasing problem. Federal, state, and local law enforcement agencies have pursued and disrupted lone-wolf attacks on multiple occasions in the past few years. Still, a discrepancy exists between the amount of attention these attacks have received in the media and law enforcement when compared to the sum of scholarly literature and scientific data (Spaaij, 2010).

Literature and data are the foundation of strong policy. It will be necessary to bolster research on lone-wolf terrorism prior to enacting effective policy to reduce the occurrence of attack and mitigate the consequences. The synthesis of existing literature combined with novel analysis will increase the collective knowledge of lone-wolf terrorism.

The following literature review focuses on the scholarly literature and scientific data in three areas integral in understanding what is known about lone-wolf terrorism. The first section reviews qualitative characteristics of the tactic of lone-wolf attacks to include information that shows a shift towards the incidence of this tactic and the rationalization behind these attacks, as well as the increased occurrence. The goal of this section is to isolate characteristics of lone wolves and show that the tactic is prevalent. The second section examines the psychological and motivational forces behind lone wolves, which includes the goals and strategies used by extreme groups to promote lone-wolf terrorism, the motivational strategies and motivations of these terrorists, and the psychology of lone wolves. The goal of this section is to review the motivations and incentives for lone wolves and the factors that influence them. The third section reviews past and current trends and policies in lone-wolf terrorism to include signs and models that might predict or precede lone, domestic violent activity. Additionally, the role of the

Internet in promoting lone-wolf terrorism is examined. The goal of this section is to explore the effectiveness of existing policies and predictive models and to deduce if lone-wolf attacks are random, isolated events.

## **B. THE TACTIC OF DOMESTIC LONE-WOLF TERRORISM**

Louis Beam (1992) wrote that leaderless resistance is a fundamental departure from common themes of political and social organization. Beam, a white nationalist and proud Klansman, is not a lone wolf; however, he clearly understands the tactic. He argued that the departure from pyramidal organization was essential to subvert a tyrannical U.S. Government that operated solely in a hierarchal fashion. Hierarchal organization with numerous members could be easily penetrated while a single actor could not. Extreme right-wing lone wolves have used this concept in the United States throughout the 1990s (Integrated Threat Assessment Centre, 2007). Some terrorist groups also organize into intimate, self-sustaining cells to avoid detection.

Extreme Islamist leaders have likewise endorsed the tactic of lone-wolf terrorism. Lone, domestic actors eliminate the need for the terrorist group to provide travel and overseas training. The total amount of risk for capture is reduced. The tactic may also be popular now due to the success of heightened U.S. homeland security efforts (Integrated Threat Assessment Centre, 2007). U.S. international travel policy, legislation, such as expanded federal powers in the USA PATRIOT Act, and law enforcement training, among other efforts, have made it more difficult for terrorist groups to penetrate the United States easily after 9/11 in a cost-effective manner.

The country's diversity and its residents' freedoms do not provide a firewall against radicalization and domestic terrorism (Bergen & Hoffman, 2010). In fact, lone-wolf terrorists are a diverse population with many freedoms in the society. They share many of the same opportunities that all U.S. residents are offered. Some lone wolves have university and graduate degrees and others are employed in well-paying jobs. Terrorism expert Walter Laqueur (2003) notes that the modern terrorist must be educated and competent to thrive in the globalized and technological world. A sect of the best-connected resident extremists, such as Anwar al-Awlaki and David Headley, has joined

international terrorist groups (Integrated Threat Assessment Centre, 2007). Connected, culturally competent terrorists pose a specific threat because of their intimate knowledge of American culture. Their immersion in the culture facilitates recruitment methods that can be marketed towards U.S. residents who harbor an extreme ideology. Al-Awlaki's *Inspire* magazine, a glossy piece of English-language literature aimed at inciting jihad in western followers, has stimulated American jihadists in the past year. An article in the fall 2010 issue of *Inspire* specifies that hierarchal campaigns against the west may not be feasible; rather, lone-wolf terrorism conducted by residents would be more effective (al-Suri, 2010). Al-Suri (2010) does not give details about his intended audience, but promotes the tactic to all "believers." Lone-wolf cases examined in this thesis, such as Naser Abdo, were familiar with *Inspire*. Abdo was arrested after attempting to purchase firearms and build an explosive to be used at Fort Hood, Texas. *Inspire* magazine is widely available to the public on the Internet.

The role of the Internet in radicalizing individuals not connected to extremist groups is both significant and increasing. Additionally, foreign and domestic terrorists have created Internet publications and websites that detail best practices on committing terrorist acts. Al Qaeda has been particularly adept at using the Internet to its advantage. A 2008 report by the U.S. Senate Committee on Homeland Security and Governmental Affairs emphasizes the role that the Internet plays in proliferating terrorism. The committee finds that al Qaeda has made a tactical decision to increase the production of online propaganda, which is important because it allows the group to bypass traditional media outlets that might alter and adulterate messaging (United States Senate Committee on Homeland Security and Governmental Affairs, 2008.). Culturally capable terrorist operatives write or translate text into English so that western sympathizers and lone wolves can digest it (United States Senate Committee on Homeland Security and Governmental Affairs, 2008). These texts, which often glorify violence and jihad, appeal to younger audiences who may be most susceptible to radicalization, which is especially true for charismatic, relatable authors, such as recently killed cleric Anwar al-Awlaki. Lone wolves find the Internet particularly useful because of the ease of accessibility and anonymity (Integrated Threat Assessment Centre, 2007). The Internet also allows

organizations to release vetted information directly at a desired time to an open audience (United States Senate Committee on Homeland Security and Governmental Affairs, 2008). Open information is valuable to lone wolves because they typically do not have advanced training in weapons or terrorist tactics. Many online articles are handbooks on individual terrorist tactics including how to make bombs and use advanced firearms. In July 2007, lone actor Naser Abdo was caught plotting a terrorist attack after purchasing the exact ingredients listed in the article, “How to Build a Bomb in the Kitchen of Your Mom” in the *Inspire* online magazine. *Inspire* magazine is an important terrorist device because it can be accessed in the United States over the Internet by a lone wolf. The potential terrorist does not need to travel abroad or leave his home to learn lone-wolf terrorist tactics. In fact, a National Institute of Justice study found that forty-four percent of terrorist attacks in the United States occur within thirty miles of a terrorist’s residence (United States Senate Committee on Homeland Security and Governmental Affairs, 2008.).

Lone-wolf terrorists conducted the majority of terrorist attacks in the United States from 1978–2001 (Hewitt, 2003). This form of terrorism is particularly germane to the United States due to the high occurrence in comparison to other western countries (Hewitt, 2003.). In the United States, lone-wolf and group terrorist planning and attacks tend to occur in proximity to their residences (Smith, 2008).

The prevalence of lone-wolf style attacks in the United States is acknowledged and documented. Civil rights organizations, news outlets, and the media continue to cover lone-wolf attacks and cases foiled by law enforcement. In 1999, Mike Reynolds from the Southern Poverty Law Center predicted that lone-wolf attacks would become increasingly common in the future (as quoted in “New Face of Terror Crimes: ‘Lone Wolf’ Weaned on Hate,” 1999). No reason whatsoever exists to think that these attacks will discontinue soon.

Peter Bergen and Bruce Hoffman list four main reasons why terrorist attacks will continue to occur. These reasons have clear links to lone-wolf style attacks. First, the cost-benefit analysis conducted by terrorists is in their favor (Bergen & Hoffman, 2010). Multiple, simplistic attacks conducted by novices may seem amateur; however, these

attackers radicalize quickly and receive no time-consuming training and eventually one or more will be successful (Bergen & Hoffman, 2010.). The attacks alone also raise awareness and fear amongst the U.S. population. Second, terrorism is inexpensive. Total costs of operations for small cell or lone-wolf attacks are in the low thousands of dollars (Bergen & Hoffman, 2010.). Third, part of terrorist strategy is to attack the west with many small plots over a long period of time in an ongoing campaign (Bergen & Hoffman, 2010.). An exponential effect occurs as more and more lone-wolves attack. Fourth, small-scale attacks will continue to be developed, as they are easier to plan and operationalize (Bergen & Hoffman, 2010.). This last point is the most telling—no attack group is smaller than a lone individual.

Both group and individual terrorists deliberately choose extreme actions to publicize their views. Both choose actions that send a message of fear, raise awareness of their cause, influence local and international politics, destroy infrastructure, and correct the perceived injustice that they feel (Artiga, n.d.). Terrorism and terrorist attacks need input and output to be successful (Davis, 2010). The terrorist works in a specific society and culture—the attack is “shocking” because it is vastly different compared to cultural norms. In the end, the lone-wolf terrorist’s goal, regardless of ideology or rationale, is to affect the society that has marginalized his lifestyle and points of view.

### **C. PSYCHOLOGICAL AND MOTIVATIONAL FACTORS**

A combination of unique psychological and motivational factors may be present in extremists who choose to develop as lone wolves. Terrorist groups and their charismatic leaders are issuing propaganda specifically tailored to U.S. residents with likeminded views. *Inspire* magazine has included interesting articles targeted at a westernized, extreme Muslim. Many of the articles are explicitly violent and visually pleasing. Articles in *Inspire* magazine repeatedly claim that Islam is the only true religion and that all other religions are opposition (al Suri, 2010). Islamists are morally motivated to oppose the immoral west and its efforts to promote western ideals (Davis, 2010). Psychologist Philip Zimbardo (2004) has shown that de-identifying factors that exist in group dynamics facilitate violent behavior that otherwise might be considered deplorable.

“Groupthink” eases the burden on the individual to make good, moral choices. Group-condoned, religious justification allays the natural trepidation that a lone wolf might have to commit a violent act alone.

U.S. foreign policy and interests in the Middle East further antagonize extreme Muslims. Christopher Jasparro (2010) writes that Islamist lone wolves’ primary justification for violent action is anger against the United States for actions in the Middle East and towards Muslims. U.S. foreign and domestic policies that run counter to these extreme belief-systems incite lone wolves to take action against the society that represses them or their views (Likar, 2011).

The degree to which group terrorist leaders and propaganda help radicalize each individual lone wolf is not clear; therefore, it is difficult to determine if lone wolves fight for the same reasons as group terrorists. Primary sources have shown that the goal of the extreme Islam movement is to defeat the enemy and establish Islamic rule (al Suri, 2010). In October 2004, al Qaeda leader Osama bin Laden stated, “all we have to do is to send two mujahidin to the furthest point east to raise a piece of cloth on which is written ‘al-Qaida’” in order to cause a maelstrom (Wordpress.org, 2004). It is clear that both group terrorists and lone wolves understand that solo, domestic violent extremism can be effective in promoting their minority views and causing chaos.

Successful terrorist groups ensure that they receive rewards and advantages for their membership, which can include psychological rewards, such as the affirmation that the member is “helping the cause” (Horgan & Taylor, 2001). These groups need to establish a sense of belonging and commitment in their recruits to maximize their effectiveness, stability, and loyalty (al Suri, 2010). The question with lone wolves is whether or not they feel as if they are contributing to the cause in the best way by planning and conducting lone attacks. Conversely, it is also possible that lone wolves are different from group terrorists because they are seeking personal, individual glory or are driven by personal emotions (Sageman, 2008). Clark McCauley (2008) argues that individual terrorist actions are an expression of frustration that their entire perceived group has suffered and that terrorists are motivated by an attachment to a “greater cause.”



Lone-wolf terrorism is not tied to one ideology. Lone wolves typically sympathize with a movement, but they also harbor other underlying motivations that specifically affect their radicalization and their attacks (COT, 2007). A United States Institute of Peace report on countering radicalization noted that radicalization “is a complex and highly individualized process, often shaped by a poorly understood interaction of structural and personal factors” (Vidino, 2010, p. 3). Lone wolves, by definition, are terrorists who, for the most part, have radicalized, planned, and operated alone. This individual process means it is not possible to extricate the exact psychological factors present in all lone wolves. Still, this thesis attempts to identify characteristics present in a significant number of lone wolves.

Christopher Hewitt (2003) notes that most extremists, and the general population alike, do not use violence to alter politics or policy (p. 77). However, most people who use violence as a means to an end are extremists. Violence is atypical behavior in most societies. Most people in a society strive to take actions that better their disposition, but would stop short at directly harming others to promote their philosophy. Lawrence Likar (2011) writes that terrorist acts are committed for selfish reasons to assuage the terrorists’ anger at a societal structure that does not accept their value system, and . argues that these terrorists are nihilistic. Their violent acts are committed for personal motivations and as a vehicle to propagate their anger and politics. Religious, ethnic, and anti-government rationalizations are secondary in importance. It is unclear whether this is a conscious decision for the lone wolf; however, it is logical to believe lone wolves have personal motivations for their actions due to the intrapersonal nature of their planning efforts and attacks.

In *Terror in the Name of God*, Jessica Stern (2003) writes that a unique characteristic of individual terrorists is that their ideologies are created using a combination of existing radical ideologies and specific, personal vendettas. This belief is important because it allows the lone wolf to lead an individual movement similar but separate from terrorist group movements. Even lone terrorists who have admitted they wished to join a radical group are atypical when compared to group members. Lone wolf Jose Pimentel built pipe bombs to be used against law enforcement, military, and

government targets. He was arrested in November 2011 prior to conducting an attack. Although he was a Muslim convert who sympathized with extreme Islamist groups, family members believe his desire to perform violent actions began after a divorce from his wife (Dominican Authorities Probe U.S. Bomb Plot Suspect, 2011). Contradictory to his religious rationalization, Pimentel did not regularly pray or attend his local mosque (Flock, 2011). Lone-wolf cases are interesting because each one is vastly different. The lone wolf's ideology is a combination of the entirety of his history and contexts.

The U.S. Senate Committee on Homeland Security and Governmental Affairs (2008) concluded that certain incendiary points are conveyed to terrorist group sympathizers to incite action. These points are the following.

- The west is engaged in a war against Islam
- Muslims are obligated to defend their religion
- Violence is acceptable in defending the religion (Terrorist Use of the Internet for Strategic Communications, 2006)

These points may incite Islamist lone wolves, but as a terrorist subset, they are also affected by situational conditions and their personal history and culture (Zimbardo, 2004).

In "The Enigma of Lone Wolf Terrorism: An Assessment," Ramon Spaaij analyzes attributes of lone wolves across multiple countries. Spaaij (2010) attempts to characterize lone wolves by aggregating data and reviewing specific case studies. He concludes that the "mixture of causal factors is diverse and unique for each individual" and that a singular psychological profile is not present for all lone wolves (p. 867). He also writes that statistical analysis is not enough to understand the phenomenon fully (p. 861). Still, statistical analysis may be able to show the steps, characteristics, and situational forces that exist in lone wolves or in successful lone-wolf style attacks.

Psychologists who study terrorism tend to believe that situational forces and intrapersonal perception are more likely to determine a terrorist compared to dispositional forces and static characteristics, such as ethnicity or religion. Fathali Moghaddam (2007) argues that one's psychological interpretations of material conditions and perceived options to counter these conditions are the first steps to turning to terrorism, and writes

that individual interpretation supersedes education and economic conditions. Experts agree that poor education and material conditions are not good indicators of someone's likelihood of committing a terrorist act (Coogan, 2002; Foghaddam, 2007; Krueger & Maleckova, 2002). An example is Fort Hood shooter Nidal Hasan who graduated from medical school as a psychiatrist and achieved the rank of major in the United States Army.

Studies in criminal activity may also answer questions regarding terrorism. A 1977 study by Lee, Zimbardo, and Berthoff showed that inmates in a prison had a wide range of dispositional factors and characteristics. It was difficult to stereotype and profile the convicted felons in that prison system. It also may not be possible to typecast terrorists into one persona. Unfortunately, homeland security officials in the United States may be attempting to accomplish this. Policies have focused on short-term solutions to terrorism centered on individuals or groups that have completely developed (Foghaddam, 2007). These policies do not address foundational issues; rather, they look for certain factors present in recent cases. Such dispositional analyses are overly central in individualistic societies, such as the United States (Triandis, 1994).

Despite the variation in motivating factors, lone wolves may hold some characteristics in common with other terrorists and each other. Similar to Moghaddam's (2007) staircase to terrorism, a "decision tree" conceptualization of behavior may exist (p. 70). One factor that should be present in all lone wolves is that they should all feel as if the traditional government, culture, and dominant society are against their own ideals (Davis, 2010). Zimbardo (2004) writes that, assuming the previous statement is accurate, "it is neither mindless nor senseless, only a very different mindset and with different sensibilities" that individuals become terrorists (p. 46). Focusing on the terrorist act as "mindless," "senseless," and horrifying distorts the ability to find answers as to why human beings execute these actions (Horgan, 2005). This thought process makes it difficult to isolate the factors that cause someone to become a lone-wolf terrorist.

Some experts have argued that psychological disorders are a factor in becoming a terrorist. Hewitt (2003) writes that the rate of psychological disturbance is higher in lone wolves than the general population. This conclusion was reached after carefully studying

cases of lone-wolf terrorism. Spaaij (2010) claims that psychological conditions could be a key variable in explaining why some terrorists join groups while others remain independent. This concept would specifically mean that a lone wolf's social ineptitude might be a defining characteristic that leads to conducting actions in isolation. Jaspardo agrees with most experts that few lone wolves fit an exact profile; however, he isolates similarities that lone wolves share (Spaaij, 2010). Jaspardo (2010) writes, "at least nine of the suspected lone wolves have been described...as loners. Ten had experienced significant life crises...Seven...had criminal records. At least six appear to have suffered from mental illness" (n.p.). Despite these conclusions, recent cases of lone-wolf terrorism defy the theory that psychological disorders, peculiarities, and social outliers are present in all cases. Many recent lone wolves have been functional members of cultural and family groups without known psychological conditions.

#### **D. MODELS, POLICIES, AND THE ABILITY TO PREDICT LONE WOLVES**

Terrorism is a diverse phenomenon. Terrorism in the United States encapsulates environmental groups, right-wing extremists, anti-government activists, and extreme Islamists. The individuals that comprise these and other ideologies are equally diverse. It has been difficult for government agencies to create an accurate, universal terrorist profile. Simple profiling tactics without added intelligence has not been effective for law enforcement so far (Horgan & Taylor, 2001). Lone wolves are at least equally difficult to predict and identify prior to an attempted attack. Louis Beam (1992) wrote that lone wolves would always be difficult for authorities to capture because there "is no single opportunity for the Federals to destroy a significant portion of the resistance" (p. 5). Conversely, U.S. policy has been considerably altered after some attacks with the goal of eliminating future attempts. One example is Umar Farouk Abdulmutallab, the "Underwear Bomber." He is not classified as a lone-wolf terrorist, although he did operationalize his attack as a lone individual. Abdulmutallab successfully boarded an airplane and attempted to detonate plastic explosives hidden in his undergarments. The Transportation Security Administration (TSA) altered policy to increase screening in this area after the attack. The National Counterterrorism Center (NCTC) adapted their

systems to be able to access multiple government organizations' databases simultaneously when searching for a suspected terrorist. This adaptation and similar policies have been installed to find the needle in the haystack after an attempted attack has commenced.

Effective policies and predictive models for preventing radicalization or stopping lone wolves prior to executing an attack are even more difficult to create than policies used to thwart commenced attacks. Horgan and Taylor (2001) write that trying to find models used to differentiate between terrorists and "normal" people may not be possible. To accomplish this, fixed qualities in an individual would need to exist that point to terrorism and it would be impossible to proactively go after people with a lone-wolf trait even if it were possible to identify (Horgan & Taylor, 2001). Individual operators are also difficult to detect because their planning processes have greatly varied. Some lone wolves may act in haste or due to emotional factors while others have spent a significant amount of time planning and even practicing their operation (Jasparro, 2010). It may be difficult to predict lone-wolf terrorism; however, research may show certain signs and characteristics that lone-wolf terrorists have that differ from terrorists who choose to join a group.

A transparent characteristic of lone-wolf terrorism is that it occurs at a higher rate in the United States compared to other western countries (Hewitt, 2003; Spaaij, 2010). Only seven percent of all victims of terrorism in the United States were killed by lone wolves from 1955 to 1977; however, this portion increased to twenty-six percent from 1978 to 1999 (Hewitt, 2003, pp. 78–79). A study published in 2010 concluded lone wolves conducted nearly half of all successful Islamist attacks in the United States (Jasparro, 2010). Marc Sageman (2008) writes that many young Muslims on the fringe of the salafist movement in foreign countries radicalize together as a group of peers and commit to jihad to find glory. Extremists in the United States may radicalize alone because fewer peer networks exist or law enforcement highly scrutinizes these networks. Individualism may also influence U.S. terrorists. Individualism is a societal norm in the United States defined by concern with one's own outcome, less sharing with others, and

believing that one's own outcome is independent from others (adapted from Hui & Triandis, 1986). U.S. homegrown terrorists may be choosing lone-wolf terrorism as a tactic due to cultural, situational influences.

Domestic, individual terrorist attacks pose policy problems for the U.S. Government. Lone-wolf attacks are executed at random intervals, which intimidates society (Enders & Sandler, 2004). Lone-wolf attacks are intermittent by default because attacks are planned independently of each other. Problems that occur at random intervals are difficult to predict and prevent. Another policy problem is that no existing federal government organization is charged with identifying and culling recruitment of U.S. residents for terrorism (Bergen & Hoffman, 2010). No comprehensive policy is in place to reduce radicalization of lone wolves and prevent these perpetrators from attacking.

It may be difficult to predict lone-wolf attacks. Still, even to begin forming policy for this subset of terrorism, policymakers need a basic understanding of the context and characteristics of lone wolves. Samuel Karson (as quoted in Murray, 2001) commented, "feelings of vulnerability can be assuaged if we deal with our weakness of not knowing our enemies' intention." Information gathering will be useful in decreasing fears and vulnerability to terrorism and might simultaneously aid policymakers (as quoted in Murray, 2001).

## **E. CRITIQUE OF LITERATURE AND CONCLUSION**

Lone-wolf terrorism has become a more significant threat to the United States. The number of small-scale terrorist attacks is increasing and lone wolves conduct the highest percentage of these attacks. Still, only a few of the analyzed articles' subjects were directly related to lone-wolf terrorism. The literature lacked cohesive conclusions regarding why some terrorists choose the lone-wolf tactic while others join groups. It did not identify common steps and processes that lone-wolf terrorists take prior to conducting an attack. Such guidance in the literature would help government policy intended to interfere with these steps, and then abate lone-wolf terrorism before a deadly attack could occur.

Many questions remain unanswered regarding lone-wolf terrorism. It is not known if these attacks are completely isolated, random events or if certain factors play a role. It is also not known if certain characteristics exist in a significant number of lone-wolf cases and if these characteristics affect the potential for their success. The current literature addresses the lone-wolf tactic and the benefits of a terrorist using it; however, a statistical analysis is necessary to lay the groundwork of understanding of lone-wolf terrorism. In this thesis, a statistical analysis of lone-wolf terrorism is conducted and synthesized with important findings in the current literature to form a robust understanding of lone-wolf terrorism in the United States since 9/11.

THIS PAGE INTENTIONALLY LEFT BLANK



### **III. METHODS**

#### **A. INTRODUCTION AND DATA COLLECTION**

A large cadre of literature on the subject of lone-wolf terrorism is non-existent. The need exists for a comprehensive study of all lone wolves since 9/11. A problem with the current literature is that most of these studies focus on only a few cases of specific lone wolves. A quantitative statistical analysis of lone-wolf attackers does not exist. This analysis is necessary to create a basic understanding of the phenomenon of lone-wolf terrorism. Factually based policy and strategy to curtail individual terrorism can only be effectively formulated once this analysis is accomplished.

Quantitative, qualitative, and descriptive statistical analysis are used to examine data on lone-wolf terrorism in this thesis. The author compiled a list of lone-wolf attacks and attempts using open-source information and existing, vetted databases that include the RAND-MIPT Terrorism Knowledge Base and the University of Maryland Study of Terrorism and Response to Terrorism (START) Global Terrorism Database (GTD). These databases are home to a comprehensive list of terrorist attacks. The total set of terrorist data is filtered by: time (attacks after 9/11), geography (the United States), and the definition of lone-wolf terrorism defined for the purpose of this research. Applying these filters yielded fifty-three lone-wolf attacks that are analyzed.

A standardized list of information to be collected on each lone-wolf case was created. Individual characteristic questions were created to ensure that the information gathered by the researcher could be fairly compared across lone-wolf cases. Table 3.1 lists the information categories, questions, and explanations. These fields were populated by researching existing literature and open-source material. The latter includes previous studies, research articles, newspapers, web articles, and other forms of media.

<u>Category</u>	<u>Question</u>	<u>Answer</u>	<u>Explanation</u>
<b>Name</b>	What is the name of the terrorist?	String	
<b>Date</b>	When was the date on which the attack occurred?	String	For foiled cases or attempted attacks, the date is the day of arrest
<b>Month</b>	During which month did the attack occur?	String	
<b>Season</b>	During which season did the attack occur	String	Winter: December 21 – March 20 Spring: March 21 – June 20 Summer: June 21 – September 20 Fall: September 21 – December 20
<b>Day of Week</b>	Did the attack occur on a weekday or weekend?	String	Weekday: Monday, Tuesday, Wednesday, Thursday, Friday Weekend: Saturday, Sunday
<b>State</b>	In which U.S. State did the attack occur?	String	Includes all fifty U.S. States and the District of Columbia
<b>Latitudinal Region</b>	In what region of the country did the attack occur?	North, south	Based on state's geographic location
<b>Longitudinal Region</b>	In what region of the country did the attack occur?	East, west	Based on state's geographic location
<b>Target</b>	What type of target was the terrorist attacking?	Person of interest, general public, building, infrastructure, unknown	Attacks can have multiple targets
<b>Deaths</b>	How many deaths were directly caused by the successful attack?	Number of people	Suicide by attacker was included in total number of deaths
<b>Casualties</b>	How many people were injured due to the attack?	Number of people	
<b>Weapon</b>	What was the weapon used by the terrorist?	Biological, explosive, firearm, vehicle	Attacks can have multiple weapons
<b>Foiled</b>	Did law enforcement or another agency proactively prevent the attack?	Yes, no	Foiled attacks are defined as ones that are not successful due to intervention  A foiled attack cannot be successful or include deaths
<b>Success</b>	Did the terrorist succeed at accomplishing his goal?	Yes, no	A successful attack is one in which the lone-wolf terrorist accomplishes his main objective, as determined by the researcher  Any attack that directly caused deaths is considered successful
<b>Age</b>	How old was the terrorist at the time of the attack/arrest?	Number in years	
<b>Gender</b>	What is the gender of the terrorist?	Male, female	
<b>Ideology</b>	What was the political ideology of the terrorist?	String	
<b>Religion</b>	What were the terrorist's religious beliefs at the time of the attack?	String	
<b>Conversion</b>	Is there evidence that shows the terrorist had	Yes, no	

<b><u>Category</u></b>	<b><u>Question</u></b>	<b><u>Answer</u></b>	<b><u>Explanation</u></b>
	converted religions in the past?		
<b>Ancestry</b>	From what country is the terrorist's ancestry?	String	
<b>Employment</b>	Was the terrorist employed at the time of the attack?	Yes, no	
<b>Psychological problems</b>	Did the terrorist have any known psychological problems at the time of the attack?	Yes, no	"Yes" was recorded if any clinically diagnosed psychological problems existed or if family members suggested psychological problems existed
<b>Time since last event</b>	How many months have passed since the last lone-wolf event?	Number of months	
<b>Attempted meeting with others</b>	Did the terrorist attempt to or actually meet with other extremists?	Yes, no	"Yes" was recorded if the terrorist met with undercover law enforcement or informants
<b>Person or place of interest</b>	Did the terrorist attack a person or place of interest or the general public?	POI, public	
<b>Previous contact with extremists</b>	Did the terrorist have previous contact with known extremists?	Yes, no	
<b>Group</b>	Has the terrorist ever been a member of a terrorist group?	Yes, no	
<b>Suicide</b>	Was the attack a suicide?	Yes, no	
<b>Distance from home</b>	How far was the planned attack from the terrorist's residence?	Number of miles	
<b>Internet</b>	Did the terrorist use the Internet to radicalize, plan, or promote the attack or his ideology?	Yes, no	

Table 3.1. Data Collection Categories

The completed spreadsheet allows for a unique, comprehensive analysis of lone-wolf attacks and the relationship that certain characteristics have on these attacks and the perpetrators. The analysis and associated graphs illustrate these relationships, patterns, and descriptions.

Appropriate statistical tests were used to measure correlation, significance, and number of events. At least five analysis types were used: univariate analysis, bivariate analysis, linear regression, binomial distribution analysis, and descriptive statistics. The exact test and regression models were applied based on the specific characteristics to be studied and their relationship with other statistics. A statistical software program was used to ensure that the best model for regressions ran a stepwise selection of variables.

Univariate analysis is one in which each collected characteristic is analyzed independently from the other characteristics to form a baseline of information for the population. Graphical analysis involves visualizing variables within this data set. This simple approach graphically demonstrates the data and shows an initial estimate of the involved distributions. Qualitative statistics, such as geography of attack, gender, and religion of the lone wolf, are presented in pie charts and other graphs to give the reader a historical understanding of lone-wolf attacks since 9/11. Table 3.2 lists the characteristics analyzed graphically in this thesis.

Descriptive statistics explain the data. Tables are provided to show the total occurrences of each characteristic field. Quantitative data is also presented in tabular form with statistics, such as the mean, median, minimum, maximum, variance and standard deviation for each characteristic type.

Correlation and linear regression analyze the association and correlation between multiple variables represented by quantitative data. Table 3.3 shows how each characteristic was analyzed as a function of other characteristics to determine if patterns of characteristics in lone-wolf terrorism occur. For correlation, the association is evaluated using Pearson product-moment correlation coefficient ( $r$ ).

Binomial distribution analysis determines the probability that one of two events occur with greater likelihood than the other. An example would be using this model to find the likelihood of an attack being successful with casualties under the assumption that an attempt has occurred. Table 3.4 shows the type of  $x$  and  $y$  variable pairings analyzed using binomial distribution testing.

Both quantitative characteristics, such as age and number of casualties caused by attacks, and binomial characteristics, such as if the attack was successful or not, are analyzed in this study. The set of binomial characteristics and the set of quantitative characteristics are compared to establish any quantitative differences that may occur if a

binary characteristic is present or not, e.g., if a significant average age difference exists in successful attacks compared to unsuccessful attacks. Table 3.5 shows the set of quantitative variables compared to binomial characteristics.

## B. UNIVARIATE ANALYSIS

Univariate analysis is the analysis of a single variable and the description of that variable's attributes. Each characteristic in this section is analyzed and presented independently. Quantifiable integers are presented in a table along with each variable's statistical summary. Qualitative characteristics are presented in chart form. The following tables show each characteristic analyzed. The exploratory data analyses show patterns of the lone-wolf terrorist and are included in the univariate analysis section.

<b><u>CHART</u></b>	<b><u>CHARACTERISTIC (TITLE)</u></b>	<b><u>FACTOR 1</u></b>	<b><u>FACTOR 2</u></b>	<b><u>FACTOR 3</u></b>	<b><u>FACTOR 4</u></b>
<i>a</i>	Month	January	February	March	April...
<i>b</i>	Season	Winter	Spring	Summer	Fall
<i>c</i>	Weekday	Weekday	Weekend		
<i>d</i>	State	Alabama	Alaska	Arizona	Arkansas...
<i>e</i>	Latitudinal Region	North	South		
<i>f</i>	Longitudinal Region	East	West		
<i>g</i>	Target	POI	Building	Infrastructure	Public...
<i>h</i>	Weapon Used	Firearm	Explosive	Biological	Vehicle...
<i>i</i>	Foiled	Yes	No		
<i>j</i>	Success	Yes	No		
<i>k</i>	Gender	Male	Female		
<i>l</i>	Ideology	Anti-government	Islamist	Racism	Environmentalism...
<i>m</i>	Religion	Christianity	Islam	Judaism	Hinduism
<i>n</i>	Employment Status	Employed	Unemployed		
<i>o</i>	Psychological State	Psychological factors present	Not present		
<i>p</i>	Country of Birth	United States	Mexico	Canada	Israel...
<i>q</i>	Attempted to Meet Fellow Extremists	Yes	No		
<i>r</i>	Targeted a Specific Person	Yes	No		
<i>s</i>	Contact with Extremists	Yes	No		
<i>t</i>	Previously in Extremist Group	Yes	No		
<i>u</i>	Suicide Attempt?	Suicide	Long-term Campaign		
<i>v</i>	Used Internet to radicalize or promote interests	Yes	No		

Table 3.2. Characteristics Analyzed Graphically

### C. BIVARIATE ANALYSIS

Table 3.3 shows each characteristic analyzed as a function of other characteristics to determine if patterns of characteristics in lone-wolf terrorism exist, which are analyzed using linear regression. Each white box illustrates one scatterplot graph analyzed using linear regression.

Variable 1 -->  Variable 2 ↓ V	Age (years)	Time Since Religious Conversion (months)	Distance from home (# of miles)	Deaths (#)
Age (years)				
Time Since Religious Conversion (months)				
Distance from home (# of miles)				
Deaths (#)				

Table 3.3. Bivariate Analysis Characteristics

### D. BINOMIAL DISTRIBUTION ANALYSIS

Binomial tests are used to find the probability that a binary outcome occurs given another event and evaluates that against the assumption that the binary characteristic is equally likely to be yes/no or 1/0. A white box in Table 3.4 indicates an instance for which the test is run using the associated  $x$  and  $y$  variables.

<b>x variable →</b>	<b>y variable ↓ V</b>	<b>Attack occurred?</b>	<b>Successful?</b>	<b>Suicide attack?</b>	<b>Travel to attack point?</b>	<b>Employed?</b>	<b>Married?</b>	<b>Attacked person of int.?</b>	<b>Born in U.S.?</b>	<b>Weekday?</b>	<b>Psychological problem?</b>	<b>Contact with extremist?</b>	<b>Religious conversion?</b>	<b>Previously in group?</b>	<b>Casualties?</b>	<b>Firearm used?</b>
<b>Attack?</b>																
<b>Successful?</b>																
<b>Suicide Attack?</b>																
<b>Travel?</b>																
<b>Employed?</b>																
<b>Married?</b>																
<b>Attacked person of int.?</b>																
<b>Born in U.S.?</b>																
<b>Weekday?</b>																
<b>Psychological problems?</b>																
<b>Contact with extremists?</b>																
<b>Conversion?</b>																
<b>Previously in group?</b>																
<b>Casualties?</b>																
<b>Firearm?</b>																

Table 3.4. Binomial Distribution Analysis Characteristics

## E. CHARACTERISTIC COMPARISON

The set of binomial characteristics and the set of quantitative characteristics are compared using summary statistics to establish any quantitative differences that may occur if a binary characteristic is present or not. A white box in the Table 3.5 indicates a set to be compared.

<div> <div>x variable →</div> <div>y variable ↓</div> </div>	Internet used?			
	Bomb used?			
	Firearm used?			
	Casualties?			
	Contact with extremist?			
	Psychological problem?			
	Weekday?			
	Born in U.S.?			
	Attacked person of int.?			
	Travel to attack point?			
	Suicide attack?			
	Successful?			
	Attack occurred?			
Age				
Number of Deaths				
Distance traveled				

Table 3.5. Binomial Distribution Analysis Characteristics



## IV. ANALYSIS

### A. UNIVARIATE ANALYSIS

Data have been collected for the fifty-three cases of lone-wolf terrorism in the United States since 9/11. Information relating to thirty-two characteristics has been collected on each of the fifty-three cases. The following section is a univariate analysis of each of these characteristics. A univariate analysis is one in which each collected characteristic is analyzed independently from the other characteristics to form a baseline of information for the population of lone wolves.

Variable [Total Cases]	Total	Mean	Median	Minimum	Maximum	Variance	Standard Deviation
Deaths [N=53]	34	0.64	0	0	13	3.85	1.96
Casualties [N=53]	95	1.79	0	0	32	29.25	5.41
Age (years) [N=46]		35.44	34.5	15	88	213.45	14.61
Time Since Last Event (months) [N=53]		2.25	2	0	8	3.80	1.95
Distance Traveled (miles) [N=36]		76.14	17.5	0	811	26614.24	163.14

Table 4.1. Univariate Analysis of the Quantitative Characteristics of Lone-wolf Terrorists in the United States Since 9/11

#### 1. Quantitative Characteristics

Lone-wolf attacks continue to occur and have been occurring regularly. The median average of time between attacks is only two months for the population in this study. As described in the literature review, these terrorists come from a diverse background, have many different dispositions, and often times, mix personal grievances with defined ideologies to form their violent motivations. The mean average age for the

population is 35.44 years old. A high variance for these attackers occurs. The youngest is a fifteen-year-old high school student while the oldest is an eighty-eight-year-old World War II veteran.

Lone-wolf attacks create and spread terror; however, relatively few cases have caused casualties in the public. Only eleven cases have resulted in the murders of U.S. residents. The mean average number of deaths for each lone-wolf attack is only 0.64 deaths. Nidal Hassan's attack at Fort Hood caused thirteen deaths, the highest number of deaths caused by a lone wolf since 9/11 in the United States. The number of casualties in the attacks is slightly higher. The average attack has resulted in 1.79 non-fatal injuries.

The population of lone-wolf terrorists traveled an average of 76.14 miles to attack. The range for this characteristic was quite high. One lone wolf traveled 811 miles while many lone wolves attempted their attack in the same city or town of their residence.

## **2. Time Characteristics**

The large number of recent lone-wolf cases has caused greater attention to this phenomenon in the U.S. media and from the country's politicians. Fifty-three cases have occurred in the decade since 9/11 with a mean average of only 2.25 months in between attempted attacks. At least one attack has occurred in every calendar month of the year and the data suggest no significant increase or decrease in these attacks by each individual month. The winter, spring, summer, and fall seasons have all had at least eleven but no more than sixteen attacks. The majority of lone-wolf attacks have occurred during a traditional weekday as opposed to a weekend. Eighty-seven percent of the attacks, attempts, and arrests studied occurred on a weekday, which exceeds the seventy-one percent, or five out of the week's seven days that are Monday through Friday.

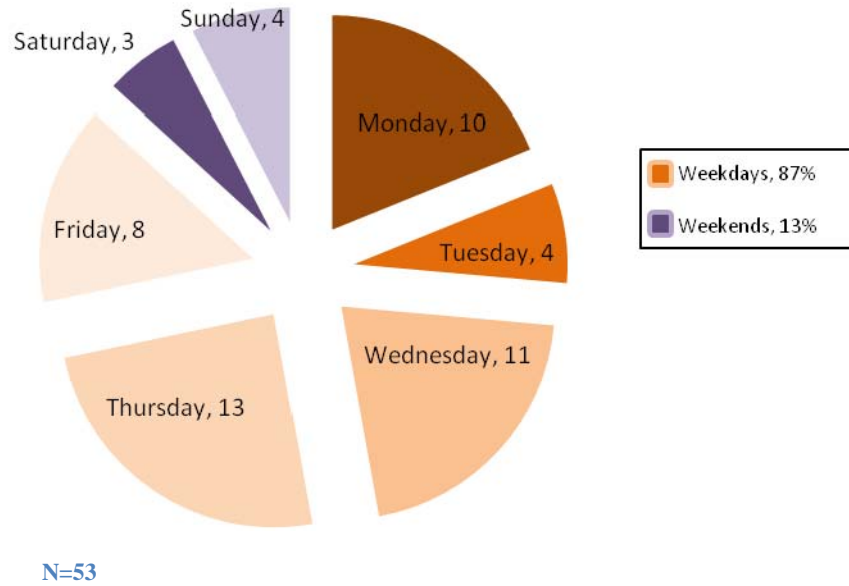
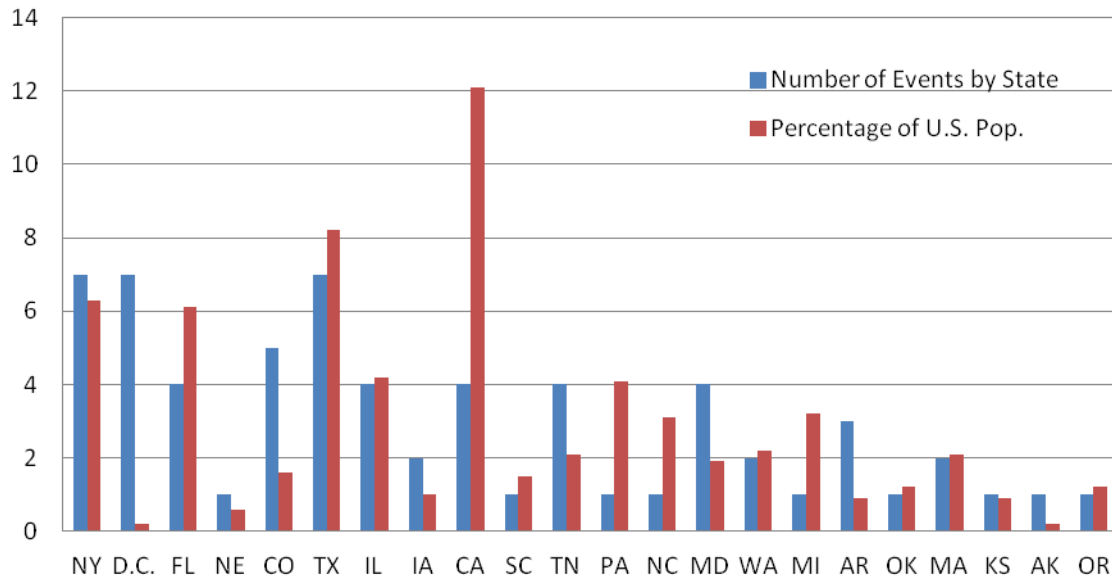


Figure 4.1. Number of Lone-wolf Attacks by the Day of Week

### 3. Geographic Location and Area Characteristics

A lone-wolf terrorist does not need to reside near a terrorist group or in any particular city, state, or region in the United States. Attempts and attacks have occurred throughout the country. The geographic region in which the most attacks have transpired is the southeast. This region includes the District of Columbia and Maryland, which have experienced a relatively high number of lone-wolf attacks. Still, a similar amount of attacks have occurred in the northeast and southwest regions. The northwest region has experienced significantly fewer attacks; however, this may be at least partially explained by the fact that this region has the smallest population included within its boundaries.



N=64 (includes attacks that occurred in multiple states)

Figure 4.2. Lone-wolf Attacks by State

Generally, the number of attacks in each state mirrors the state's population in relation to the United States. The largest states by population have typically had more attacks than the smallest states. Texas, New York, and Florida, which have high populations, have had eighteen total cases of lone-wolf terrorism. Less-populous North Dakota, South Dakota, and Rhode Island are among the twenty-eight states that have none. Notable exceptions do occur to this general concept. The District of Columbia (D.C.) has experienced seven attacks and yet comprises only 0.2 percent of the U.S. population, although, many people live in the suburban area around D.C. Still, the disparity is the largest of any jurisdiction. Colorado, Maryland, Tennessee, and Arkansas also have had a disparately high number of attacks in relation to their populations. Conversely, California, whose citizens' account for over twelve percent of the U.S. population, has been terrorized by a lone wolf only four times since 9/11. Pennsylvania and Michigan have a disproportionally low number of attacks in relation to their state populations, as well.

Lone wolves target different areas and types of people based on their objectives during their attempted terror attacks. Many lone wolves desire to kill as many people as

possible, while others endeavor to destroy symbolic buildings or infrastructure. Fewer attempt to assassinate a specific person of interest or VIP target. Twenty-four of the fifty-six known targets have been buildings, twenty-one have been U.S. residents considered part of the general public, and eight have targeted person or specific places of interest. Two others have targeted infrastructure, which include a plot to destroy oil energy installations and a lone wolf who attempted to disable a subway system. Only one case occurred in which the target is unknown. This case involved an Egyptian man who was planning on using an airplane as a weapon at an undisclosed target.

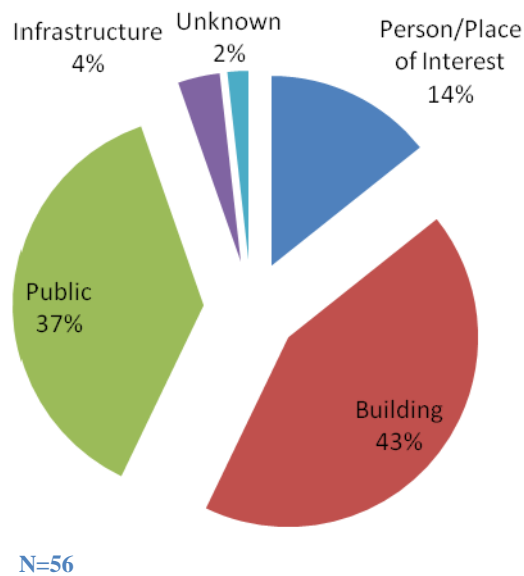


Figure 4.3. Target of Lone-wolf Attacks

#### 4. Attacker Disposition and Personal Attributes

Lone wolves have many different dispositions, characteristics, and ideologies; however, some attributes occur at a high rate. Forty-eight lone wolves have been men, which is an overwhelming majority and clearly shows that the population of extremists willing to conduct violent acts to achieve political goals in the United States is male. The remaining five cases' gender is not known. Each of these cases is still considered a lone wolf due to certain factors in each case. For example, in one case, a security video recording shows a lone actor, but the gender cannot be clearly identified.

The next most prominent characteristic is the terrorist's country of birth. Seventy-three percent (N=32) of all lone wolves in the study were born in the United States. All other countries combined equal only twenty-seven percent (N=12) and no other country appears more than twice as a lone-wolf's place of birth. All lone wolves have resided in the United States for at least a short period of time. No documented cases exist of an international lone actor entering the country to enact an immediate attack.

Lone terrorists have supported a large variety of ideologies. Many have had philosophies that mix personal vendettas with established ideologies. Almost every lone wolf has directed his anger at an authority figure or idea, such as the government or a hated race. The most prominent ideology is anti-government sentiment. Twenty-nine lone-wolf terrorists primarily espouse this ideology. The next most cited ideology is Islamist extremism, which has been the primary ideology in nineteen cases. Seven lone-wolf attacks have been justified by terrorists whose ideologies are racist. Figure 4.4 shows the proportion of primary ideologies for the lone-wolf population. Multiple key ideologies within each case were counted twice.

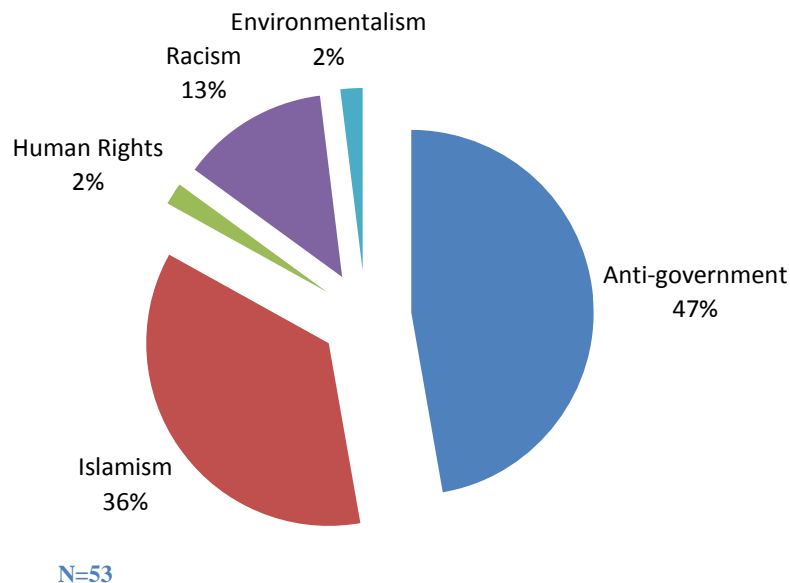


Figure 4.4. Ideology of Lone Wolves

The literature shows that terrorists need not be disadvantaged to turn to terrorism. Characteristics of the population of lone wolves in the United States since 9/11 reaffirm this finding. Of the twenty-seven cases for which educational background is known, sixteen had attended college. Fifty-four percent had at least a high school degree and an additional thirty-five percent had graduated from a university. Known, open-source data does exist on the employment status of thirty-four of the cases. At least fourteen of the lone wolves were employed at the time of their attempted attack.

Some previous studies on terrorism and lone-wolf terrorism have focused on the mental state of the perpetrator. It may be true that lone wolves have a higher occurrence of mental disorder in comparison to the general population (Spaaij, 2010); however, most lone wolves are not “crazy,” are not diagnosed with a disorder, and have no signs of mental incapacitation. For this study, a lone wolf was categorized as having a mental disorder upon meeting any of the following conditions.

- A documented history of mental disorder exists
- The person self reports a mental disorder at time of arrest<sup>1</sup>
- A family member or acquaintance reports that the lone wolf may have been mentally disturbed, including showing signs of a mood disorder, such as depression

Ten lone wolves met at least one criterion for having a mental disorder. At least twenty-nine of the cases did not meet any of the criteria. None of the most recent eighteen cases have exhibited a mental illness or been reported as having a previously known mental disorder.

---

<sup>1</sup> An insanity defense at trial does not automatically categorize the lone wolf as having a mental disorder.

## 5. Success and Mode of Attack

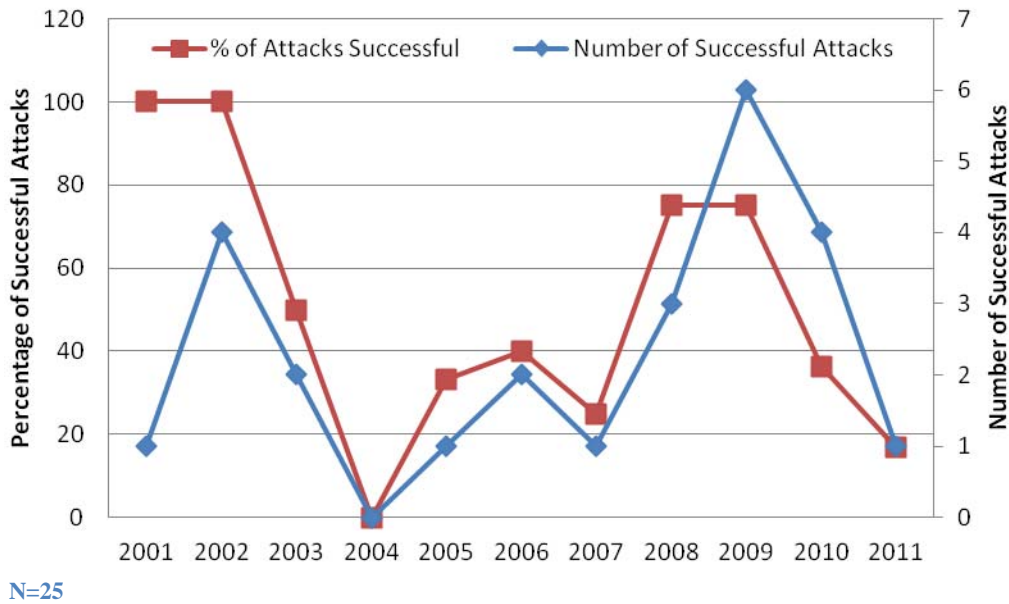


Figure 4.5. Number and Percentage of Successful Lone-wolf Attacks by Year

A number of lone-wolf attacks have been successfully executed in the United States since 9/11. A successful attack is one in which the terrorist accomplishes his main objective. Any attack that causes direct casualties is considered a successful attack, but attacks that do not cause deaths or injuries can be successful if other goals are met. Twenty-five of the fifty-three lone wolves have successfully executed their plans. These twenty-five successes have only directly killed thirty-four people, which may be due to at least two reasons. First, the lone wolf may have not properly executed his attack due to insufficient planning or weapons that malfunctioned during the attack. Second, law enforcement or another government agency may have intervened prior to the successful execution of an attack. Twenty-four of the cases studied have not been successful due to the direct intervention of an outside party. Authorities have foiled nine out of the last ten cases of lone-wolf terrorism. Authorities are not able to intervene in all lone-wolf cases because these terrorists plan and operate in isolation. The number of successful attacks and percentage of attacks varies each year. Since a high of six successful attacks in 2009, the percentage of successful attacks and total number of successful lone-wolf attacks decreased in both 2010 and 2011.



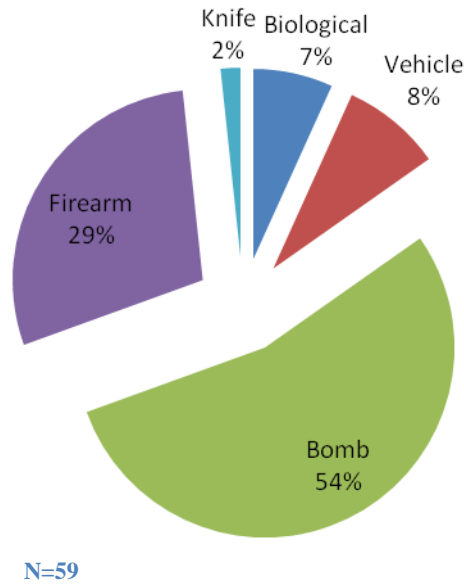


Figure 4.6. Weapon Used by Lone Wolf

Different types of weapons have been used to conduct lone-wolf style attacks. Fifty-nine weapons have been used in the cases studied, which is possible because some lone wolves used multiple weapon types. The most common weapon of choice is an explosive device or bomb. Thirty-two attackers detonated, attempted to use, or planned to use a bomb. In fact, fourteen of the last sixteen lone-wolves' primary weapon was a bomb. Seventeen lone wolves have used a firearm, which includes handguns, rifles, and machine guns. Five used a vehicle to attack persons or places, which consists of automobiles and airplanes. Four terrorists used a biological or chemical weapon to include actual or perceived anthrax, ricin, and sarin gas. Only one terrorist used a knife that was used in conjunction with an explosive device.

A small percentage of lone-wolf terrorists have incorporated suicide tactics in their attack method. Ninety-one percent (N=48) of lone wolves have not attempted to or successfully committed suicide. Only nine percent (N=5) of lone wolves have attempted to commit suicide. Only three successful suicide attacks have been perpetrated by lone-wolf extremists during which the lone wolf has committed suicide or been killed in an apparent purposeful "death by law enforcement." The ideologies of the five suicide attackers are mixed—four different ideologies comprise the five attackers.

## 6. Contact with Extremists

The definition of lone-wolf terrorism does not preclude the person from having been a member of a terrorist group prior to becoming a lone actor; however, very few members of the population in this study had previously been affiliated with a group. In fact, ninety-three percent (N=43) of the population for whom data are available had never been a member of a terrorist group. Lone-wolf terrorists rarely attempted to meet other extremists for any kind of support prior to or during the planning period for their attacks. Only eight out of forty-five lone wolves had known contact with other extremists, which includes indirect contact over the Internet and direct, face-to-face contact. A higher percentage of lone actors attempted to meet other extremists before, during, or after their terrorist attack. Twenty-seven percent (N=12) of lone wolves for whom data are available attempted to meet at least one other extremist. The contacts were not directly involved in planning or operating the terrorist attack and this number includes cases in which U.S. law enforcement officials posed as extremists in an undercover operation.

## 7. The Internet

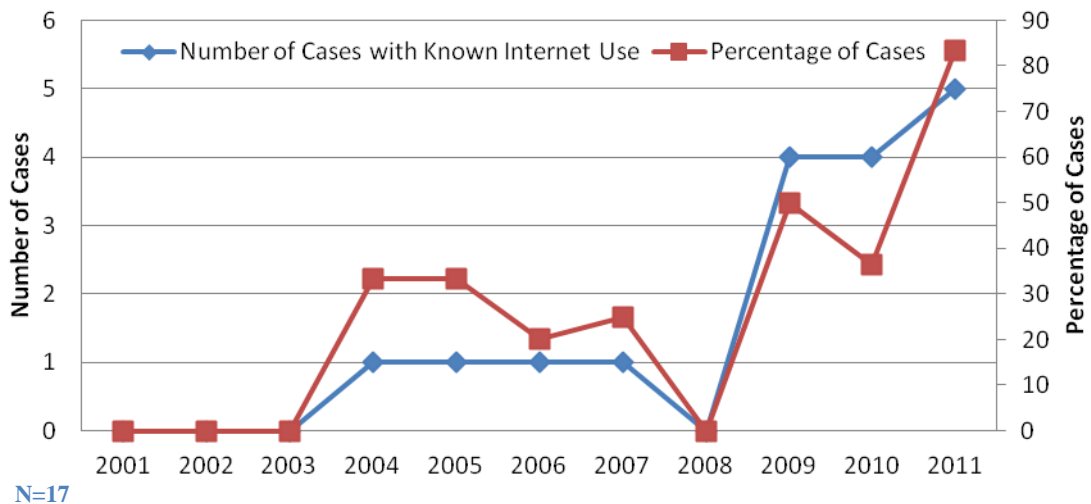


Figure 4.7. Number of Lone Wolves That Used the Internet by Year

Many of the lone wolves who contacted ideologically similar extremists did so over the Internet, which grants anonymity and a medium through which the lone wolf can contact international extremists with relative ease. The U.S. Senate Committee on

Homeland Security and Government Affairs (2008) has found that the Internet offers the most accessible source of passive and interactive information to terrorists. Seventeen of forty-six (37%) lone wolves actively learned or disseminated extremist ideologies on the Internet, which includes online radicalization, contact with extremists through the Internet, and posting extreme propaganda. The use of the Internet continues to be a predominant trend in lone-wolf terrorism in the United States. The highest percentage of lone wolves used the Internet in 2011. Five of the six cases directly used the Internet in 2011. The number and percentage of total cases that have actively used the Internet has increased since 2008.

## B. BIVARIATE ANALYSIS

Quantitative data were collected for the age of the terrorist, number of months since the terrorist's religious conversion (if applicable), the number of deaths caused in the attack, the number of casualties caused in the attack, and the number of miles traveled to attack. The following section is a bivariate analysis of these data. A bivariate analysis is one in which two characteristics are analyzed together to determine the relationship between them.

X-variable	Y-variable	Number of Cases	r <sup>2</sup> Value
Age of conversion	Time since conversion	6	-0.124
Age	Distance traveled	36	0.073
Age	Number of deaths in success	13	0.00
Age	Number of deaths in attempt	46	0.037
Distance traveled	Number of deaths in success	13	-0.104

Table 4.2. Bivariate Analysis of the Quantitative Characteristics of Lone-wolf Terrorists in the United States since 9/11

The quantitative variables collected in this study have relatively weak associations with each other. The age of the lone wolf and the number of deaths in a successful attack had no correlation at all. Age and the number of deaths in the forty-six attacks for which

data were present is very weakly associated and produced a correlation coefficient ( $r^2$ ) of 0.037. This increases to 0.118 if the case of Nidal Hassan, in which thirteen individuals were killed, is removed. A slight positive correlation occurs between age and the number of miles traveled to attack. As a trend, older lone-wolf terrorists have traveled further to commit their crime in comparison to younger attackers. The  $r^2$  value is 0.073 for these variables; however, this number increases to 0.135 if the outlier case involving an eighty-eight-year-old lone wolf is removed. Further travel is not a positive indicator of success in terms of number of deaths—a negative association exists between the distance traveled to attack and the number of deaths in a success. The correlation coefficient for this pair of variables is -0.104. The strongest correlation seen is between the age of religious conversion and the time since the terrorist converted. Older terrorists tended to be associated with a shorter amount of time since their conversion from when the attack occurred. The  $r^2$  value is -0.124, although only six cases had numerical data available for both variables.

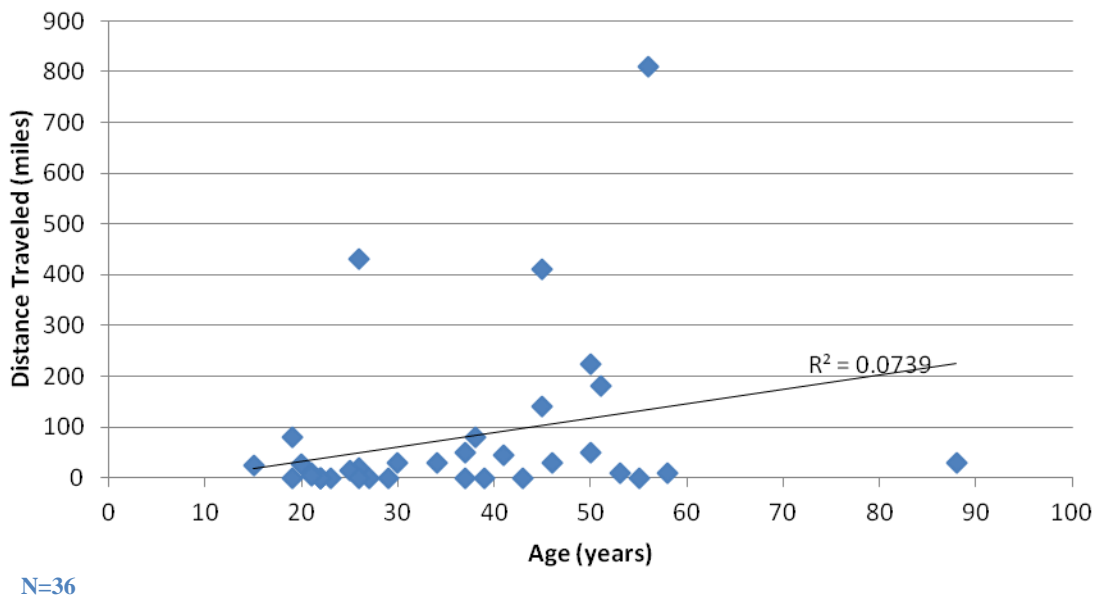


Figure 4.8. Distance Traveled by Lone Wolf to Attack by Age

## C. BINOMIAL DISTRIBUTION ANALYSIS

Binomial distribution tests are used to analyze the number of successes in a sequence of results in which the only two possibilities are either a success or failure. For this study, binomial tests are used to find the probability that a binary outcome occurs given another event and evaluates that against the assumption that the binary characteristic is equally likely to be yes/no or 1/0.

### 1. Binomial Distribution Tables

Table 4.3 displays the results of the binomial distribution analysis for the fifty-three cases of lone-wolf terrorism in the United States since 9/11. The first column is a list of characteristics collected and the number of times that this characteristic appeared out of the fifty-three total cases. The first row lists the same characteristics. The purpose of the binomial distribution analysis is to compare which characteristics occur a high or low number of times given that another characteristic is present. The integer listed in each cell of the table is the number of times that the characteristic in the corresponding top row has occurred given that the characteristic in the leftmost column is present. An example is written as follows.

- Given that there have been [#] times that [first column characteristic] has occurred; there have been [# in corresponding cell] times that [first row characteristic] has occurred.
- Given that there have been fifty-three attacks; there have been twenty-five times that they have been successful.

The characteristics listed in the first row and column are considered binomial because each characteristic either occurs or does not occur in each of the fifty-three lone-wolf cases. A binomial distribution test was run for each characteristic, which produces a lower and upper quantile range for the number of times that each characteristic in the top row can occur assuming that the characteristic in the first column has occurred. In other words, given  $n$  number of occurrences of a certain characteristic, this test shows the minimum and maximum number of occurrences that a second characteristic could appear to be 95% confident that the second characteristic has an equal chance ( $p=0.5$ ) of occurring. For example, given that seventeen attacks used a firearm, the lower quantile

range is five and the upper quantile range is twelve. Eleven of the attacks using a firearm were successful and is within the range. In other words, an attack using a firearm may have been equally likely to be successful as not successful. On the other hand, only one of the attacks using a firearm was a suicide attack, which falls well below the lower quantile range; therefore, the possibility is rejected that a suicide attack has been equally likely as a non-suicide attack for lone-wolf terrorists using a firearm.

A green cell in the Table 4.3 indicates a characteristic that falls within the quantile range. A yellow cell indicates that the number of occurrences of a characteristic is one outside the range. A red cell indicates that the number of occurrences is more than two outside the range and the characteristic in the top row's probability of occurring is not equal to 0.5.

Binomial Distribution Analysis of Characteristics of Lone-wolf Terrorists in the U.S. since 9/11		Attack occurred?	Successful?	Suicide attack?	Travel to attack point?	Employed?	Married?	Attacked person of int.?	Born in U.S.?	Weekday?	Psychological problem?	Contact with extremist?	Previously in group?	Casualties?	Firearm used?	Bomb used?
Attack N=53			25	5	27	14	4	24	33	46	10	8	3	10	17	32
Successful N=25				3	13	6	3	10	17	21	7	3	2	10	11	9
Travel N=27			13	3		5	1	12	20	22	7	3	3	5	11	16
Employed N=14			6	2	5		3	5	11	13	2	5	1	4	6	7
Attacked person of interest N=24			10	2	12	5	2		13	21	4	3	1	2	4	17
Born in U.S. N=33			17	4	20	11	3	13		28	9	8	3	8	14	20
Weekday N=46			21	4	22	13	4	20	28		8	7	2	9	13	30
Psychological problems N=10			7	2	7	2	2	4	9	8		2	1	5	4	4
Contact with extremists N=8			3	1	3	5	2	3	8	7	2		2	2	4	5
Casualties N=10				1	5	4	3	2	8	9	5	2	0		6	1
Firearm N=17			11	1	11	6	3	4	14	13	4	4	2	6		
Bomb N=32			9	1	16	7	1	17	20	30	4	5	1	1		
Characteristic is within range by 2+		Characteristic is within range by 1														
Characteristic is within range by 0 or outside of range by +/- 1																
Characteristic is outside of range by 2-3		Characteristic is outside of range by 4+														

Table 4.3. Binomial Distribution Analysis of Characteristics of Lone-wolf Terrorists in the United States Since 9/11

Table 4.4 is the same binomial distribution analysis presented differently. The cell values that fall within the quantile range have been blacked out. The remaining cells in blue are below the lower quantile and the cells in orange are above the higher quantile. This table shows clear patterns in some of the lone-wolf characteristics.



Binomial Distribution Analysis of Characteristics of Lone-wolf Terrorists in the U.S. since 9/11		Attack occurred?	Successful?	Suicide attack?	Travel to attack point?	Employed?	Married?	Attacked person of int.?	Born in U.S.?	Weekday?	Psychological problem?	Contact with extremist?	Previously in group?	Casualties?	Firearm used?	Bomb used?
Attack N=53			5	27		4			33	46	10	8	3	10	17	32
Successful N=25			3						17	21		3	2			
Travel N=27			3		5	1			20		7	3	3	5		
Employed N=14			2						11	13	2		1	4		
Attacked person of interest N=24			2	12		2			13	21	4	3	1	2	4	17
Born in U.S. N=33			4	20		3				28	9	8	3	8		
Weekday N=46			4	22		4			28		8	7	2	9	13	30
Psychological problems N=10			2	7					9			2	1			
Contact with extremists N=8			1		5				8				2	2		
Casualties N=10			1				2	8	9			2	0			1
Firearm N=17			1	11			4	14		4	4	4	2			
Bomb N=32		9	1	16		1		20	30	4	5	1	1			

Characteristic is 2+ below minimum	Characteristic falls on minimum or 1 below
Characteristic falls on maximum or 1 above	Characteristic is 2+ above maximum

Table 4.4. Binomial Distribution Analysis of Characteristics of Lone-wolf Terrorists in the United States Since 9/11

## **2. The Relationship Between Lone-wolf Attacks and Other Characteristics**

This section examines the prominence of each of the characteristics assuming that an attack has occurred. Some characteristics are within the quantile range of the binomial distribution analysis. In other words, it is fair to assume that this characteristic may have been about equally likely to occur during an attack as to not occur, which is the case with the likelihood of success. Twenty-five cases have been successful and fall in the middle of the quantile range. Employment at the time of attack and the target being a person or place of interest (POI) also are within the quantile range. Thus, the probability of a lone-wolf terrorist within the population of the study may have been about even to have been employed or unemployed, attacked a POI or the general public, and been successful or unsuccessful.

Many characteristics of an attack occur for which it is unlikely that the probability was  $p=0.5$  according to the statistical analyses. Certain characteristics for which it is likely that the probability of them occurring during a lone-wolf attack is much below fifty percent. These characteristics are suicide tactics, marriage, psychological disorder, contact with extremists, previous membership in a terrorist group, casualties occurring in an attack, and a firearm being used in an attack.

Some characteristics of an attack occur for which the probability is higher than  $p=0.5$ . The characteristic whose total number of occurrences is the highest above the upper quantile limit is travel. In other words, a lone wolf has likely had a much better chance of traveling to attack than staying stagnant; although, lone wolves who stay closer to home have caused more casualties in their attacks. The additional characteristics that are higher than the upper limit are being born in the United States, the attack occurring on a weekday<sup>2</sup>, and an explosive device or bomb being used in the attack.

---

<sup>2</sup> The quantile ranges were weighted appropriately for weekday/weekend data to account for the fact that there are five weekdays in a week and only two weekend days.

### **3. The Relationship Between Successful Attacks and Other Characteristics**

Many characteristics fall within the appropriate quantile range to make it fair to say that they may have been about equally likely to occur as to not occur during successful lone-wolf attacks. These characteristics are travel, employment, marriage, attacking a POI, having a reported psychological disorder, casualties during the attack, and the use of a firearm and explosive device. Thus, these characteristics, in a successful attack, may have been about equally likely to be present or not present.

Suicide tactics, previously being a member of a terrorist group, and having contact with extremists were less likely to be present in successful terrorist attacks; although, these characteristics also appear less frequently in all cases of lone-wolf terrorism studied.

Two interesting characteristics are seen a much higher number of times than the upper quantile limit. It is unlikely that the probability was as low as fifty percent for a lone wolf to be born in the United States in a successful attack. It is also unlikely that the probability was as low as fifty percent for a lone wolf to attack on a weekday in a successful attack. Many lone wolves who successfully attacked have been born in the U.S. and attacked on a weekday.

### **4. The Relationship Between Travel and Other Characteristics**

Twenty-seven individuals traveled outside of their town or city to commence an attack. In these cases, the characteristics that fall within the quantile range are success, attacking a POI, the attack transpiring on a weekday, the weapon being a firearm, and the weapon being a bomb. It is fair to say that these characteristics may have been equally likely to be present given that a lone wolf traveled to commence his attack.

The characteristics that fall below the lower limit of the range are suicide, employment, marriage, psychological problems, having previous contact with extremists, having been in a terrorist group, and casualties caused as a direct consequence of the

attack. These characteristics have existed in few enough cases in which the terrorist has traveled that it is unlikely that the probability of them occurring was as high as fifty percent.

The only characteristic significantly higher than the upper limit of the quantile range was being born in the United States. Twenty of the traveling lone-wolf population for whom a birth country is known were born in the United States.

## **5. The Relationship Between Employment and Other Characteristics**

Research has shown that at least fourteen lone wolves were employed when they commenced their attack. Within this population, the characteristics that fall within the quantile range and whose probability may be about equal are success, travel, marriage, attacking a POI, contact with extremists, firearm used, and a bomb or explosive device being used. Employment is the only characteristic for which direct contact with extremists is *not* below the minimum quantile range.

The presence of suicide tactics, psychological problems, membership in a terrorist group, and casualties are below the lower limit range. Therefore, the probability of these characteristics being seen in the employed lone wolf was probably less than fifty percent.

## **6. The Relationship Between Attack a Person or Place of Interest and Other Characteristics**

Twenty-four lone wolves in the United States targeted a POI. These targets were either a specific very important person or a symbolic building or area. Many of the characteristics gathered fall just outside of the quantile range. The only two characteristics within the range are success and employment. It is reasonable to suggest that the lone wolves who targeted POIs were about as likely to succeed as to fail and about as likely to be employed as to be unemployed.

Suicide tactics, psychological disorder, prior contact with extremists, previous membership in a terrorist group, casualties in the attack, and using a firearm all occurred fewer times than the lower range limit.

The population of lone wolves who focused on a POI traveled to attack, was born in the United States, attacked on a weekday, and used an explosive device a greater number of times than the upper limit.

#### **7. The Relationship Between Being Born in the United States of America and Other Characteristics**

As the reader might hypothesize, the majority of lone-wolf terrorists in the United States have been born there. Thirty-three members of the population studied for whom birth data are available meet this criterion. The characteristics that appear a number of times within the quantile range are success, employment, attacking a POI, the use of a firearm in the attack, and using a bomb during the attack.

Suicide tactics, psychological disorder, prior contact with extremists, previous membership in a terrorist group, and casualties in the attack occurred fewer times than the lower range limit. The probability of these characteristics existing given that the lone wolf was born in the United States may have been less than fifty percent for each case.

Traveling to attack and attacking on a weekday are the two characteristics that appeared a significantly high number of times. Twenty-eight of the thirty-three lone wolves born in the United States attacked on a weekday. This reached the upper limit of the quantile range. Twenty lone wolves born in the United States traveled to their attack point, which was above the upper limit.

#### **8. The Relationship Between an Attack Occurring on a Weekday and Other Characteristics**

A large percentage of attacks commenced between Monday and Friday. Forty-six of the fifty-three attacks occurred on a weekday. During these attack attempts, the number of times that the characteristics success, employment, and attacking a POI falls within the quantile range. It is fair to say that these characteristics, given that an attack has occurred on a weekday, may have been equally likely to be seen as not seen.

Suicide tactics, psychological disorder, prior contact with extremists, previous membership in a terrorist group, casualties in the attack, and the use of a firearm occurred

fewer times than the lower range limit. The probability of these characteristics existing given that the lone wolf proceeded with the plan on a weekday may have been less than fifty percent for each case.

Conversely, workweek attackers used a bomb, were born in the United States, and traveled to their attack point a greater number of times than the maximum quantile.

## **9. The Relationship Between Reported Psychological Disorder and Other Characteristics**

Psychological disorder alone is not enough to explain the phenomenon of lone-wolf terrorism. Still, ten of the fifty-three lone-wolf terrorists in the United States since 9/11 have been reported as having a psychological disorder. This small population means that the quantile range will be a large percentage of the possible population. The minimum threshold is two and maximum is eight. Success, employment, marriage, attacking a POI, attacking on a weekday, casualties, using a firearm, and using a bomb all fall within this range.

Committing or attempting to commit suicide and having contact with a fellow extremist fall on the lower range. Only one case occurs in which the lone-wolf terrorist had a known psychological disorder and was previously a member of a terrorist group. This case is consistent with previous studies that demonstrate the difficulty that a terrorist with a psychological disorder would have in joining a group (Sageman, 2004).

The characteristics for which a probability as low as fifty percent can be rejected are traveling to an attack point and being born in the United States. Nine of ten lone wolves with a reported psychological disorder were born in the United States.

## **10. The Relationship Between Contact with another Extremist and Other Characteristics**

Only eight lone wolves had direct contact with at least one extremist prior to conducting an attack. The lone-wolf definition precludes any individual who plans an attack with anyone else from being a member of the studied population. The small population of lone wolves who have had contact with another extremist makes the binomial distribution analysis insignificant for many of the characteristics gathered for

the study. Suicide, previous membership in a group, and casualties incurred in an attack occurred infrequently enough to be below the minimum limit. The most significant result is that all eight of the lone-wolf terrorists who met with other extremists were born in the United States, which is above the maximum.

#### **11. The Relationship Between Casualties Occurring in an Attack and Other Characteristics**

The relative dearth of casualties and deaths directly caused by lone-wolf terrorism in the United States since 9/11 makes the binomial distribution analysis insignificant for most of the other characteristics studied. Many of the characteristics fall within the quantile range. Nine of the lone-wolf attacks with casualties occurred on a weekday and terrorists born in the United States perpetrated eight of these attacks. Both fall on the upper range limit. The most significant finding is that in the ten cases with casualties, only one involved a bomb and this case only injured one person, which is below the minimum limit.

#### **12. The Relationship Between the Use of a Firearm and Other Characteristics**

Weapon information was collected on all fifty-three cases of lone-wolf terrorism in the United States since 9/11. Seventeen of these terrorists used a firearm or planned to use a firearm in these attacks. Four of these cases also used an explosive device in conjunction with the gun.

Assuming that a firearm is used, some of the other characteristics studied are within the quantile range of the binomial distribution analysis. Thus, it is fair to assume that this characteristic may have been about equally likely to occur during an attack with a gun as to not occur, which is the case with the likelihood of success. Eleven of the seventeen cases involving a firearm have been successful. Employment and marriage at the time of attack are also within the quantile range. In other words, the probability of a lone-wolf terrorist who used a gun within the population of the study may have been about even to have been employed or unemployed, married or single, and been successful or unsuccessful. Finally, firearm attacks producing casualties also fell in this range.

The characteristics for which it is likely that the probability of them occurring during a lone-wolf attack is below fifty percent are suicide, attacking a person of interest, psychological disorder, contact with extremists, and prior membership in a terrorist group.

Only two characteristics have a total number of occurrences higher than the upper quantile limit. These characteristics are being born in the United States and traveling to the point of attack.

### **13. The Relationship Between the Use of an Explosive Device (Bomb) and Other Characteristics**

Distinct differences occur between lone-wolf cases in which bombs were involved and in which firearms were involved. Thirty-two lone wolves used an explosive or planned to use an explosive in their attack, which accounts for fifty-four percent of every weapon used in the study population. Relatively few characteristics fell within the quantile range in which it is reasonable to assume that the probability of its occurrence is about fifty percent. The characteristics are employment and attacking a POI. Given that a lone wolf is attempting an attack with a bomb, it is reasonable to say that there is an equal chance of being employed or unemployed and is targeting a POI or the general public.

Some characteristics appear relatively few times during an attack with an explosive device. These characteristics are success, suicide attack, marriage, psychological disorder, contact with extremists, previous membership in a terrorist group, and casualties incurred in the attack. Only nine of the thirty-two attacks involving a bomb were successful and only one of these attacks caused any casualties at all. The casualty was a minor injury caused by a pipe bomb.

A few characteristics appear a relatively high number of times in the attacks involving an explosive device. Travel was just higher than the maximum limit in the quantile range. Therefore, the probability that a lone wolf using a bomb traveled to attack is likely higher than  $p=0.5$  in the population. The numbers of times that a terrorist was born in the United States and the attack occurred on a weekday also are greater than the maximum limit.



## D. BINOMIAL AND QUANTITATIVE CHARACTERISTIC COMPARISON

Both quantitative characteristics, such as age and number of casualties caused by attacks, and binomial characteristics, such as if the attack was successful or not, are analyzed in previous sections of this chapter. The following section compares the set of binomial characteristics to the set of quantitative characteristics to establish any quantitative differences that may occur if a binary characteristic is present or not, e.g., if a significant average age difference in successful attacks exists compared to unsuccessful attacks.

Summary statistics have been calculated to describe and examine the set of data. These statistics are presented in the following tables. The summary statistics used for each data set are the minimum number, the first quartile, the mean average, the median average, the third quartile, the maximum number, and the standard deviation. The mean and median are measures of central tendency calculated to indicate the center of the population. The interquartile range is comprised of all data found between the first and third quartile. The first quartile is the point below which only twenty-five percent of the data are found. The third quartile is the point above which only twenty-five percent of data are found. Fifty percent of the data are found between the first and third quartiles. The standard deviation measures the spread of the distribution. Results that have been bolded and italicized in the tables are considered significant due to the large quantitative difference found between the “yes” and “no” conditions of the binary characteristic.

### 1. Age Comparison

Binary Characteristic	Minimum	1 <sup>st</sup> Quartile	Mean	Median	3 <sup>rd</sup> Quartile	Maximum	Standard Deviation
Successful	15.0 years	26.0	40.7	<b><i>41.0</i></b>	51.0	88.0	17.3
Unsuccessful	19.0	22.0	31.0	<b><i>27.0</i></b>	38.0	55.0	10.3
Suicide	15.0	20.0	37.2	43.0	53.0	55.0	18.6
No Suicide	19.0	23.0	35.2	34.0	45.0	88.0	14.3
Travel	15.0	23.0	37.9	<b><i>38.0</i></b>	48.5	88.0	16.6
Did Not Travel	19.0	22.0	29.7	<b><i>26.0</i></b>	37.0	55.0	10.7

Binary Characteristic	Minimum	1 <sup>st</sup> Quartile	Mean	Median	3 <sup>rd</sup> Quartile	Maximum	Standard Deviation
Attacked POI	20.0	26.3	36.9	36.0	46.8	55.0	12.4
Not Attack POI	15.0	22.0	34.5	29.5	40.25	88.0	16.0
Born in U.S.	15.0	22.5	<b>37.3</b>	<b>37.0</b>	45.5	88.0	14.9
Born Out of U.S.	19.0	19.5	<b>23.1</b>	<b>21.0</b>	24.5	34.0	<b>5.5</b>
Weekday Attack	19.0	22.0	34.9	34.0	42.0	88.0	14.6
Weekend Attack	15.0	26.5	38.3	45.0	48.5	58.0	15.7
Psych. Disorder	15.0	20.5	33.6	32.5	45.5	55.0	14.4
No Psych. Disorder	19.0	22.0	36.0	34.0	45.0	88.0	16.0
Contact w. Extremist	20.0	22.8	32.0	32.0	37.5	51.0	10.5
No Contact w. Extremist	15.0	22.0	35.9	34.0	45.0	88.0	15.5
Casualties	20.0	22.3	36.3	34.5	50.0	58.0	15.0
No Casualties	15.0	24.3	35.2	34.5	45.0	88.0	14.7
Firearm Used	21.0	26.0	40.7	<b>39.0</b>	50.0	88.0	17.1
No Firearm Used	15.0	22.0	32.4	<b>29.0</b>	40.0	55.0	12.3
Bomb Used	19.0	21.5	<b>30.8</b>	<b>29.0</b>	37.5	50.0	9.8
No Bomb Used	15.0	26.0	<b>42.0</b>	<b>43.0</b>	54.0	88.0	17.9
Internet Used	19.0	21.0	<b>28.5</b>	<b>26.0</b>	35.0	55.0	10.4
Internet Not Used	15.0	26.8	<b>39.5</b>	<b>39.0</b>	50.0	88.0	15.6

Table 4.5. Comparison of Lone Wolves' Age (Years) to Binary Characteristics

Popular terrorist myth, as described in the literature review, is that terrorists are young and uneducated. Contrary to this profile, there is a wide range of ages of lone-wolf terrorists in the United States. The youngest lone offender is fifteen-year-old Charles Bishop and the oldest lone wolf is eighty-eight-year-old James Von Brunn. The mean average age for the population is 35.44 years old.

In some instances, a correlation may occur between age and binary characteristics. The median age of successful lone-wolf attackers is forty-one years. This age is much older than the median age of unsuccessful ones, which is only twenty-seven years. The older population of this study has generally had more success than the younger population. A marked difference exists in traveling to attack as well. The median age of the lone-wolf population that ventures out from their resident city is thirty-eight years. In comparison, the median age of lone wolves who attack in their hometown is twenty-six years. The median age of the population who was born in the United States is thirty-seven years old. The median age of those born in a foreign country is twenty-one years old, which is a large and consistent discrepancy. The oldest lone wolf to be born outside of the United States was only thirty-four years old and the standard deviation for this population is a picayune 5.5 years.

Additional differences in the method of planning and weaponry used in lone-wolf attacks occurred. A ten-year age discrepancy exists between lone actors who chose a firearm and those that chose an explosive device. The median age for firearm use is thirty-nine years old while the median for no firearm in the attack is twenty-nine years. The dataset on bombs is the opposite. The median age for incorporating an explosive device in an attack is twenty-nine years while the median age for not using a bomb is forty-three years.

The use of the Internet is an emerging trend in lone-wolf terrorism. The number and percentage of total cases that have actively used the Internet has increased since 2008. Data suggest a difference in the age of the population of lone wolves who use the Internet and those that do not. The median age of the population that used the Internet is twenty-six years old. The median age of lone wolves that did not is thirty-nine.

## 2. Death Comparison

Binary Characteristic	Minimum	1 <sup>st</sup> Quartile	Mean	Median	3 <sup>rd</sup> Quartile	Maximum	Standard Deviation
Successful	0.0	0.0	1.4	1.0	1.0	13.0	2.7
Unsuccessful	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Suicide	0.0	0.0	0.8	1.0	1.0	2.0	0.8
No Suicide	0.0	0.0	0.6	0.0	0.0	13.0	2.1
Travel	0.0	0.0	0.4	0.0	1.0	3.0	0.8
Did Not Travel	0.0	0.0	1.7	0.0	1.0	13.0	3.7
Attacked POI	0.0	0.0	0.4	0.0	0.0	5.0	1.1
Not Attack POI	0.0	0.0	0.9	0.0	1.0	13.0	2.5
Born in U.S.	0.0	0.0	0.9	0.0	1.0	13.0	2.4
Born Out of U.S.	0.0	0.0	0.3	0.0	0.0	3.0	0.9
Weekday Attack	0.0	0.0	0.7	0.0	0.0	13.0	2.1
Weekend Attack	0.0	0.0	0.6	0.0	1.0	2.0	0.8
Psych. Disorder	0.0	0.0	1.3	1.0	1.8	5.0	1.6
No Psych. Disorder	0.0	0.0	0.7	0.0	0.0	13.0	2.4
Contact w. Extremist	0.0	0.0	1.9	0.0	1.0	13.0	4.5
No Contact w. Extremist	0.0	0.0	0.5	0.0	1.0	5.0	1.1
Firearm Used	0.0	0.0	<b>1.5</b>	1.0	1.0	13.0	3.1
No Firearm Used	0.0	0.0	0.2	0.0	0.0	5.0	0.8
Bomb Used	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	0.0
Internet Used	0.0	0.0	0.8	0.0	0.0	13.0	3.2
Internet Not Used	0.0	0.0	0.7	0.0	1.0	5.0	1.2

Table 4.6. Comparison of Number of Deaths Caused in Lone-wolf Attacks to Binary Characteristics

Table 4.6 visually emphasizes the fact that relatively few deaths have been caused by lone-wolf terrorists in the United States in the past decade. The mean average number

of deaths per case is only 0.64. Only three of the fifty-three attacks have produced more than two deaths. The limited number of deaths makes it difficult to glean meaningful associations. The most significant comparison is between the use of explosive devices and firearms. The mean average number of deaths caused by a lone-wolf attack involving a firearm is 1.5, which is not a prodigious figure; although; it is significant compared to explosive devices. Since 9/11, no lone-wolf attack incorporating a bomb has directly caused a single death.

### 3. Distance Traveled to Attack Comparison

Binary Characteristic	Minimum	1 <sup>st</sup> Quartile	Mean	Median	3 <sup>rd</sup> Quartile	Maximum	Standard Deviation
Successful	0.0 miles	0.0	77.1	20.0	37.5	811.0	188.0
Unsuccessful	0.0	0.0	75.1	15.0	80.0	430.0	135.9
Suicide	0.0	7.5	15.5	17.5	25.5	<b>27.0</b>	12.8
No Suicide	0.0	0.0	75.1	15.0	80.0	430.0	135.9
Attacked POI	0.0	2.5	94.2	28.5	117.5	430.0	148.7
Not Attack POI	0.0	0.0	64.6	12.5	41.3	811.0	174.1
Born in U.S.	0.0	0.0	67.1	20.0	50.0	430.0	119.3
Born Out of U.S.	0.0	0.0	110.7	20.0	45.0	811.0	263.4
Psych. Disorder	0.0	12.5	43.7	27.0	37.0	180.0	62.2
No Psych. Disorder	0.0	0.0	95.4	10.0	80.0	811.0	195.5
Contact w. Extremist	0.0	0.0	38.3	0.0	37.5	180.0	72.2
No Contact w. Extremist	0.0	0.0	87.6	17.5	57.5	811.0	181.4
Casualties	0.0	0.0	<b>10.4</b>	<b>0.0</b>	10.0	<b>45.0</b>	<b>16.1</b>
No Casualties	0.0	0.0	<b>98.0</b>	<b>27.0</b>	80.0	811.0	183.7
Firearm Used	0.0	0.0	87.1	22.0	57.5	811.0	200.2
No Firearm Used	0.0	0.0	67.4	15.0	35.0	430.0	131.1
Bomb Used	0.0	0.0	77.3	21.0	72.5	430.0	136.2
No Bomb Used	0.0	0.0	75.0	15.0	41.3	811.0	190.4

Binary Characteristic	Minimum	1 <sup>st</sup> Quartile	Mean	Median	3 <sup>rd</sup> Quartile	Maximum	Standard Deviation
Internet Used	0.0	0.0	56.9	3.0	50.0	430.0	119.8
Internet Not Used	0.0	0.0	87.0	25.0	47.5	811.0	184.9

Table 4.7. Comparison of the Distance Traveled by Lone Wolves to Attack (Miles) to Binary Characteristics

A wide range occurs in the distance that the lone-wolf population traveled to conduct their crimes. Many members of the population did not leave their hometowns or cities. Conversely, at least six of the fifty-three lone wolves journeyed further than one hundred miles from their residence. The expansive range, variance, and standard deviation hinder the direct comparison of some characteristics. Still, a few areas related to travel stand out. Although only five cases of attempted suicide have occurred, none of these lone wolves traveled further than twenty-seven miles. The number of miles traveled differs in attacks that caused casualties versus those in which no one was injured. In attacks with casualties, the mean average distance traveled is 10.4 miles. The maximum distance traveled is only forty-five miles. In contrast, the mean distance traveled is ninety-eight miles for attacks that did not produce casualties.

## E. RESULTS

A comprehensive analysis of the characteristics of lone wolves and their attacks is necessary to build a foundation of core knowledge on the subject, which is accomplished in this thesis by using univariate analysis, bivariate analysis, binomial distribution analysis, and quantitative characteristic comparison. These analyses illuminate themes in lone-wolf terrorism that are listed in Table 4.8. The themes are characteristics often, or rarely, present in attacks and characteristics associated closely with other characteristics.

Characteristic	Often Associated with...	Rarely Associated with...
Male	Attacks	
Weekday	Attacks	
Born in the United States	Attacks; Success	
Travel	Attacks;	Success; Casualties; Deaths
Explosive Devices	Attacks; Attacking POIs; Born in the United States	Success; Deaths; Casualties; Marriage; Suicide
Firearms	Born in the United States; Attacking the General Public	Attacking POIs; Suicide
Older Age	Travel; Born in the United States; Firearm; Success	Bomb; Internet
Younger Age	No Travel; Born Outside of the United States; Bomb; Internet	
Suicide		Attacks
Previously in Terrorist Group		Attacks
Contact with Extremists		Attacks

Table 4.8. Themes of Lone-wolf Attacks in the United States Since 9/11

Some of the themes of lone-wolf terrorism found by statistical analysis do not conform to previous notions of terrorism. Many of these notions and profiles are discussed in the literature review section of this study. Single case studies and inferential dispositional analyses may have led some policymakers, members of the homeland security community, and the public to form a visual profile of the lone-wolf terrorist in the United States. However, lone wolves have had many different dispositions, characteristics, and ideologies. The only characteristic undoubtedly present in every case is that the attacker is a terrorist who plans an attack against an adversary alone and attempts to conduct the plan alone.

THIS PAGE INTENTIONALLY LEFT BLANK



## **V. DISCUSSION**

### **A. RESEARCH FINDINGS AND DISCUSSION**

Synthesizing the statistical analysis presented in this study with the existing literature on lone-wolf terrorism formulates a foundation for knowledge and preventive policy regarding lone-wolf terrorists in the United States since September 2001. Due to their isolated nature, these extremists present unique problems to the homeland security community and law enforcement. It will be difficult to identify and apprehend every future lone-wolf terrorist; however, strategies may be able to be developed to reduce the number of cases or their effects. A historical, comprehensive understanding of lone-wolf characteristics, attacks, factors that lead to successful attacks, motivations, and goals is necessary to frame the threat of lone-wolf terrorism in the United States. Effective policy and strategies to reduce the number of successful attacks and minimize the impact of lone-wolf terrorism can be properly developed once this decrease has been accomplished.

#### **1. Research Question 1: What Are the Characteristics of Lone Wolves, Their Plans, and Their Attacks**

No single profile describes the U.S. lone-wolf terrorist. Few of the fifty-three cases had overwhelming similarities across multiple characteristics. The results of the analysis show that some popular stereotypes of lone actors are not correct. Lone-wolf terrorists are not necessarily lower-class residents with no prospect of social mobility. In fact, they are about as likely to be employed as unemployed. Sixteen of the twenty-seven cases for which educational background is known had attended college prior to committing their attack. Additionally, no clear majority of cases exhibits any psychological disorder. The small population of lone wolves disallows a statistically significant comparison of behavioral health between these specific terrorists and the general population; however, no characteristics within this study occurred for which psychological disorder is co-associated higher than fifty percent ( $p=0.5$ ).

No comprehensive portfolio of precise characteristics can be used to establish a single profile of a lone-wolf terrorist. Although a profile does not exist, certain characteristics and relationships amongst characteristics are indicative of lone-wolf terrorists. The population in this study is entirely male. A female lone-wolf terrorist has not appeared in the United States in the past decade. A higher proportion of men belong to terrorist groups, as well; although, it is striking that no single female perpetrator exists at this time. It is likely one will appear in the future; however, this study has shown that no exact, constant disposition of a lone wolf exists.

It is interesting that a high percentage of the cases occurred on a weekday as opposed to a weekend. Only seven of the fifty-three lone wolves attacked or were apprehended on a Saturday or Sunday. Lone wolves targeting the general public may have chosen a weekday to increase the number of casualties and attention to their attack. Some initial research on user-supplied feeds on the social media website Twitter shows that users write angrier language on weekdays, especially Thursday (Ahn, Lehmann, Mislove, Onnela, & Rosenquist, 2010). Only one successful case has targeted the general public on a weekend. Jim Adkisson specifically attacked the congregation of a church near his house during Sunday service when he knew that his target would be filled with the most people possible.

The majority of lone wolves who have targeted American people, buildings, and infrastructure were born in the United States, which is logical because the attacks in this study all transpired on U.S. soil. Certain cultural aspects of U.S. society might also predicate an extremist to become a lone wolf. The United States is a society that tends to emphasize individualism and personal disposition (Triandis, 1994). This societal characteristic, coupled with potential advantages of being U.S.-born, such as having a higher level of understanding of U.S. culture, may lead to a disproportionately high number of lone-wolf attacks in the United States perpetrated by U.S.-born lone wolves.

Lone-wolf tactics vary based on the attacker's skill level, ideology, and goals. Lone wolves have used many different attack styles. These attackers have used firearms on U.S. citizens, planted bombs, and chosen their automobile as a weapon of choice. The most popular weapon for lone-wolf style attacks in this study is an explosive device. A

bomb has been chosen more than every other weapon combined and twice as often as a firearm. This finding is in contrast to Ramon Spaiij's study (2012) on lone-wolf terrorism. He finds that lone wolves worldwide use firearms at a higher rate than explosives. Lone wolves within the United States within his population used a gun seventy-percent of the time (Spaiij, 2012). This study analyzes attacks from 1968–2010. The two studies combined may show that the preferred weapon of lone wolves may be evolving over time.

Lone wolves may be choosing bombs due to the amount of overt, excessive violence that a successful explosive causes. At least one article in *Inspire* magazine has focused on bomb building technique. A longer planning process may be necessary in plots involving improvised explosive devices (IEDs). The individuals who choose this method must acquire the materials and build the bomb. Although lone wolves who use firearms may or may not have planned ahead for their attacks, significant premeditation is a necessary component of a lone-wolf attack involving an explosive device.

Another interesting aspect of lone-wolf terrorism is travel. Twenty-seven of forty lone wolves whose residencies are known traveled to commence their attack. Only one of these twenty-seven traveled less than ten miles from their residence and nearly all traveled more than twenty-five miles, which makes sense for any terrorist who wishes to attack a specific target, building, person, or large public gathering not in the immediate vicinity of the lone wolf's residence. The time and distance that a lone wolf travels may be an area in which an intervention by law enforcement can occur. Unexpected travel by a suspect could indicate operational terrorist activity. The number of lone wolves who have traveled over twenty-five miles to commit an attack is significant because law enforcement agencies across multiple jurisdictions may be involved in intervening. Future policy for law enforcement will need to be formed to ensure that proper collaboration and information sharing exists between these partner agencies.

## **2. Research Question 2: What Are Factors and Characteristics That Are Related to Success and Failure?**

Both travel and explosive devices are seen in a majority of cases of lone-wolf terrorism; however, the analysis shows that neither of these attack characteristics has a strong positive relationship with success. More attacks have been successful when the lone wolf does not travel from his resident city or town. The analysis in this study demonstrates that a high number of deaths caused in a lone-wolf attack is not associated with travel. Many confounding variables may add to this effect. For example, terrorists who travel might be more likely to have elaborate plans that are difficult to complete. Mobile lone wolves might also be more likely to use an explosive device, which is rarely seen in successful attacks. In fact, there has not been a single death caused by a lone wolf using a bomb in the United States since 9/11. Many lone wolves have attempted to buy material and create bombs; however, few have successfully conducted an attack with one.

Lone-wolf attacks are successful nearly half the time. Twenty-five of the fifty-three attacks in this study met the perpetrator's main objective.<sup>3</sup> In some cases, this objective is to kill people to prove a point, but there are also individuals who used terrorist tactics to destroy symbolic buildings or promote political and personal views. These cases can also be considered successful.

There are some characteristics that have a positive relationship with successful lone-wolf attacks. The first characteristic is being born in the U.S. Although more than half of all lone-wolf terrorists within the population were born domestically in the United States, sixty-eight percent of all *successful* attacks came from U.S.-born terrorists. These lone wolves caused eleven of the twelve attacks that incurred deaths. The only foreign-born lone wolf in the study who successfully killed U.S. residents, Hesham Mohamed Hadayet, had lived in the country for at least a decade. This study suggests that older age is the second characteristic that has a positive relationship with successful attacks. The median average age of an attacker is forty-one years in a successful attack while the average age for an unsuccessful attack is twenty-seven years. This difference in age may

---

<sup>3</sup> In cases in which the lone-wolf terrorist did not explicitly cite his main objective, the objective was inferred by the researcher.

be due to the lone wolf's patience or experience, and also possibly due to weapon choice and other attack characteristics. The mean average age of lone wolves who used only a firearm is 44.0 years old; whereas, the average age for those who used a bomb is only 30.6. Casualties and deaths are rare in lone-wolf attacks. These outcomes are especially rare in attacks involving explosive devices, which is interesting because more training and planning may be necessary to use a bomb effectively compared to a firearm.

### **3. Research Question 3: What Are the Incentives and Motivations for an Extremist to Choose the Lone-wolf Tactic?**

Right-wing nationalist Louis Beam (1992) first promoted the lone-wolf tactic to avoid the pitfalls of a hierarchal terrorist organization that government authorities could easily disrupt. Extreme Islamists have adopted the strategy in recent publications including *Inspire* magazine. Promoting the lone-wolf tactic is valuable to group terrorists because lone wolves share some ideological similarities. The lone wolf is a pre-deployed, culturally immersed soldier with few, if any, ties to the terrorist organization.

This study demonstrates that personal motivations may cause the lone wolf to use the tactic. Although propaganda is useful for potential terrorists, charismatic terrorist group leaders may not be the main catalyst for lone-wolf terrorism. Furthermore, lone wolves are not strictly acting on behalf of terrorist groups. The culture of individualism in the United States coupled with situational and contextual factors increase the occurrence of lone-wolf terrorism in America. Lone wolves combine their personal ideologies, history, and grievances with established group ideologies. Each actor essentially creates a separate terrorist group comprised of one individual. The data in this study support this claim. The lone-wolf population has had little contact with fellow extremists prior to conducting an attack. Only eighteen percent of the population in the study had previous contact with extremists. A sect of lone wolves attempted to meet with outside extremists just prior to operationalizing an attack; however, nearly all of these cases involve lone wolves who had already established objectives and plans to attack. Only seven percent of the studied lone wolves had ever been a member of a terrorist group. This study demonstrates that the majority of lone wolves in the United States since 9/11 have

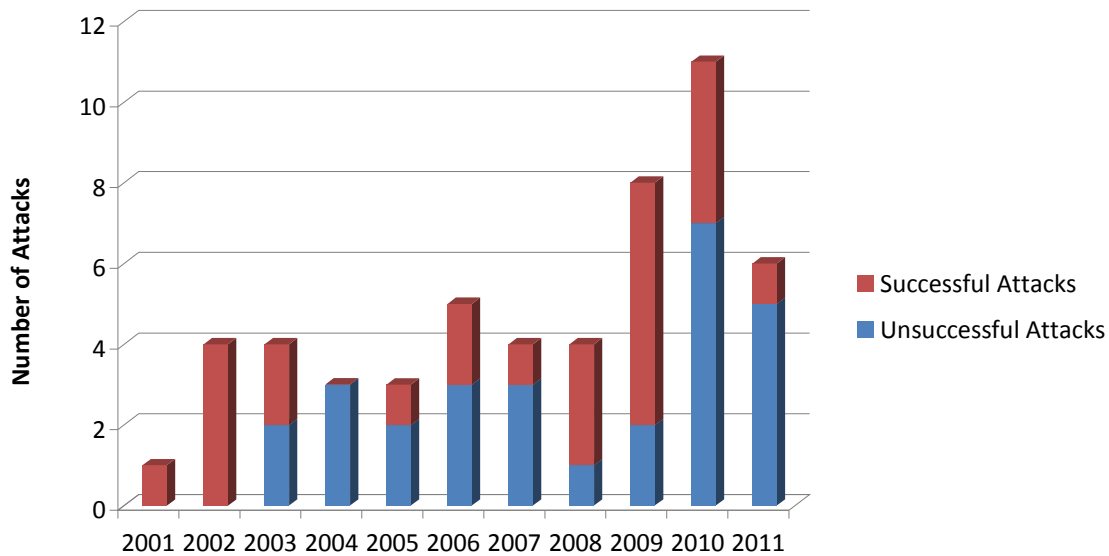
radicalized alone while formulating personal goals. These goals may align with group terrorist goals; however, the lone-wolf terrorist is not a direct agent of the group.

Suicide is an interesting characteristic that has rarely accompanied attacks. Lone wolves in the United States may be opting for individual, long-term campaigns. Lone wolves have planned or attempted only five suicide attacks. This low number is in direct contrast to trends in group terrorism that show the suicide tactic as increasing in popularity throughout the world (Brannan et al., 2004). Only one Muslim extremist has successfully completed a suicide attack, fifteen-year-old Charles Bishop who flew a small plane into a building causing no additional casualties in 2002.

#### **4. Research Question 4: Are Lone-wolf Attacks Random, Isolated Events?**

Lone-wolf attacks in the United States in the past decade appear to occur at frequent, random intervals. No clear pattern in the time of year of the attacks and amount of time between attacks occurring is noticed. An important statistic is that lone-wolf attempts (including arrests) have been more likely to occur on a weekday than a weekend. Eighty-seven percent of the attempts studied occurred on a weekday, which exceeds the seventy-one percent, or five out of the week's seven days that are Monday through Friday. This result could be purposeful. Lone wolves may be specifically targeting attacks for weekdays to raise awareness of the attack due to increased media exposure. Additionally, attacks on the general public might be planned for weekdays because the perpetrator believes it will increase the number of casualties, disrupt society, and ensure that people are in predictable locations.

As a general trend, the number of lone-wolf attacks per year is increasing. The average number of attacks per year from 2009–2011 is higher than any other three-year average since 2001. Twenty-five of the total fifty-three cases occurred during this time period.



\* 2001 includes date from September 12, 2001 through December 31, 2001  
N=53

Figure 5.1. Number of Lone-wolf Attacks in the United States by Year

A number of factors may be contributing to the increase in attacks over time. One characteristic that has been increasing at a similar rate is the use of the Internet. More than three times as many lone wolves are known to have radicalized online or propagated their views on the Internet from 2009–2011 (N=13) than in all other years combined (N=4). The data in this study suggest that lone wolves radicalize alone in many cases. Internet websites and propaganda are some of the few conduits for radicalization without direct contact with other extremists. Online campaigns by right-wing radicals and Islamists groups, such as al Qaeda in the Arab Peninsula (AQAP), effectively target individuals who may turn to lone-wolf terrorism. Anwar al-Awlaki had directed the AQAP online campaign. It will be interesting to see how the AQAP online campaign continues after his death on September 30, 2011 and if it affects the number of attacks by Islamist extremists in the United States in future years.

**5. Research Question 5: What Policies and Recommendations Can Be Instituted to Reduce the Number of Lone-wolf Attacks and Their Effects?**

The diverse population of lone wolves who have planned and conducted attacks in the United States does not allow for a strict profile of these attackers. The examination of dispositional factors, such as age, race, and religion, will not be an effective method for detecting these extremists. This study demonstrates that lone wolves take some actions in a high percentage of cases. These actions and contexts can be highlighted as potential intervention points for law enforcement. Intervention can be best accomplished as law enforcement builds intelligence on a suspected case of lone-wolf terrorism. As intelligence gathering occurs, it might be beneficial to release information to the public. Publishing information on specific threats, groups, or individuals (including unknown individuals who have completed an attack) could apply pressure on lone-wolf terrorists and force them to make a mistake or alter plans (Spaaij, 2012).

The three actions that have been taken by a high percentage of lone wolves are using an explosive device, traveling to attack, and attacking on a weekday. Table 5.1 indicates examples of policies and procedures that could be implemented to reduce attacks.

Associated Action of Lone Wolf	Preventive Policy / Procedure	Objective
<b>Travel to Attack</b>	Highway toll operators trained to be front-line of “See Something, Say Something” campaign	Toll operators able to spot suspicious behaviors or indicators of terrorists that are traveling
	Use of automatic license plate readers on highway systems to flag suspected lone wolves’ travel	Raise awareness of suspects traveling to law enforcement
	Closely monitor any travel of suspected terrorists	Disrupt attack during travel stage
	Train law enforcement officers to recognize atypical behavior during routine traffic stops	Police officers able to spot suspicious behaviors or indicators of terrorists that are traveling



Associated Action of Lone Wolf	Preventive Policy / Procedure	Objective
<b>Using Explosive Device</b>	Distribute list of bomb “ingredients” as published by terrorist propaganda to retailers that carry these components	Retail locations able to notice suspicious purchases
	Monitor IP addresses of Internet users who view websites that contain information on building explosive devices	Build intelligence on individuals who view websites with information on bomb building. These individuals may be more likely to create an explosive device.
<b>Attack on a Weekday</b>	Closely monitor absences from work for any individuals that have been identified as terrorist suspects	Disrupt attack and account for unplanned absences
	Increase protection of events or high-value targets on weekdays	Enhance security and increase likelihood of disrupting an attack

Table 5.1. Examples of Preventive Policies and Procedures to Reduce Occurrences of Lone-wolf Terrorism

This study demonstrates characteristics and actions that have occurred in the past. The data and results do not guarantee that future attacks will follow these patterns. Additionally, the variance in the dispositional characteristics of lone wolves makes it difficult to formulate a method to detect these terrorists amongst the general population. A more effective method may be to address overarching issues in communities at-risk for terrorism by influencing factors surrounding residents at risk of radicalization. LaFree and Bersani (2012) demonstrate that ethnic diversity in neighborhoods may result in isolation, alienation, and feelings of marginalization from the larger host community and that these conditions are significantly associated with areas where terrorists attack. Host communities, and their government agencies should make an effort to demarginalize the marginalized. This effort can be accomplished by incorporating minority populations, including residents who have minority political views, in the host community and its organizations. Ensuring opportunity may temper extremism. Governments and communities do not need to promote radical views, but they may need to acknowledge their existence publicly.

Phillip Bobbitt (2008) writes that a community is in either a state of terror or state of consent, that these forces are constantly pulling each other, and that those residents with minority views are in a state of terror. This study on lone wolves demonstrates that these actors have individualized, marginalized views. Further, it has been shown the lone wolves radicalize alone, rarely fit in with terrorist groups, and feel isolated from the community. These individuals are left open to violent extremism. Bobbitt (2008) suggests that a state of consent can overcome a state of terror by precluding the conditions of terror. Along these lines, a society that grants individuals with minority political views the freedom to express these views in a non-violent manner will be a community of consent. Conversely, the state of terror prevails when the host community's fear of minority views is so high that it alleviates that community's discomfort with allowing policy that decreases freedom and opportunity for both majority and minority views.

## **B. LIMITATIONS**

The purpose of this study is to examine the characteristics of lone-wolf terrorism in the United States since 9/11. A broad spectrum of data has been collected and analyzed. The analysis has led to results that can be considered a basis of knowledge on this population. Unfortunately, the wide spectrum of characteristics precluded the study from having a narrow focus on any single characteristic or relationship between characteristics.

The data were collected using open-source, unclassified information from a variety of sources including mainstream media, published reports, and existing databases. It was not possible to collect every data point for every characteristic across every case of lone-wolf terrorism.

A specific definition for lone-wolf terrorism has been used in this study to best define the population. Cases may arise that meet some, most, or even all of the criteria in the definition that have not been included in this study. Additionally, numerous cases of lone-wolf terrorism outside of the United States and cases within the United States before 9/11 were not analyzed as part of this study.

The population of the study (N=53) is relatively small. In some instances, insufficient data existed for a particular characteristic to run a certain statistical test. Characteristics for which little or no data are available were not included in the analysis.

### **C. OPPORTUNITIES FOR FURTHER RESEARCH**

Lone-wolf terrorism is a narrow subject; however, the attributes examined in this study encompass a wide and diverse range of information on this phenomenon. The analysis of this information has developed a basis of knowledge on the subject, but areas for further research have also been uncovered. Some of the significant findings in this study warrant additional consideration and focus in separate studies. These findings include the low number of suicide attacks, the high number of attacks on weekdays, the older age of successful lone wolves, the limited amount of exposure lone wolves have had with extremists and extremist groups, and the high percentage of terrorists who chose to attack using an explosive device.

The information on lone wolves gleaned from this study needs to be compared to at least two other populations. First, an examination between these terrorists and their counterparts in other foreign countries worldwide should be conducted. The comparison between the two populations could yield results that might elicit different tactics for curbing lone-wolf terrorism in different countries. Second, the juxtaposition between the characteristics of lone-wolf terrorism and members of terrorist groups should be studied. Numerous studies on groups in the past have yielded policies to reduce terrorism. The direct comparison between lone-wolf and group terrorists will show which policies that have been developed for group terrorists might be either successful or unsuccessful in abating lone-wolf terrorism.

Finally, this study is an overview and analysis of lone-wolf terrorism that has occurred in the United States from 2001 to 2011. Similar studies will need to be completed periodically to validate the conclusions expressed in this study and capture emerging trends in lone-wolf terrorism.

## **D. CONCLUSIONS**

The study of lone-wolf terrorism in the United States since September 2011 demonstrates that few static characteristics are common to this population. A wide range and many differences in characteristics occur, such as age, race, ideology, and religion. The most often associated personal attributes are male gender and being born in the United States. These findings are logical and existing literature on terrorism affirms the dominance of males in terrorist groups. These findings are notable; however, they do not narrow down the population of potential lone wolves within the general population. Personal context, environmental factors, and external stimuli may be better indicators of lone-wolf attacks. To best understand and recognize these factors, community involvement and outreach are vital, which should include community oriented policing practices. It will also be essential to increase the role that minority populations, including those who harbor minority political views, have in community organizations, government, and the political process. The high percentage of lone wolves who have had little or no contact with terrorist groups indicates that a distinct and discrete law enforcement strategy is necessary for these terrorists. Current strategies for countering terrorist groups may not be effective for reducing lone-wolf attacks.

The other opportunity for intervention is during common steps associated with lone-wolf attacks. Some actions have been conducted by a high percentage of these offenders. Policies need to be developed to intervene during common practices, such as traveling to the point of attack, attacking on a weekday, using the Internet to radicalize, and building and using an explosive device in an attack.

Lone-wolf terrorism is complex—each individual actor has multiple personal contexts and motivations. An individual lone wolf defines his goals based on a mixture of personal grievances, self-interest, and established ideology. The individual terrorist effectively constitutes his own, solo terrorist group. Conversely, terrorist group organizations have defined, overarching goals. A group member may have many contexts, but, while conducting group activity, the terrorist largely follows the organization's established ideals. The data from this study show that most lone wolves have never been members of terrorist groups and have had little or no contact with

extremists. This study demonstrates that many lone wolves not only plan and operate alone, but that they also radicalize alone or indirectly with other extremists. The radicalization process begins when the extremist feels that either peers or the community at large marginalizes his views.

The direct, overt consequences of lone-wolf terrorism have been minimal in the United States. Only thirty-four deaths and ninety-five casualties were caused by the phenomenon in the decade since 9/11. On the other hand, the threat of lone-wolf terrorism is relatively high. At least fifty-three attacks and attempts have occurred during this time period. Undoubtedly, additional lone-wolf attacks on American soil will occur in the future. To reduce the threat level, U.S. policy to curb lone offender extremism will need to be developed based on the analysis of past attacks. These policies should increase engagement between the community and government and reduce the minimization of minority views.

THIS PAGE INTENTIONALLY LEFT BLANK

## **APPENDIX. SUMMARY OF LONE-WOLF CASES IN THE UNITED STATES OF AMERICA SINCE 9/11**

### **1. September 2001—Bruce Ivens**

A series of packages containing a white powder were sent to various locations in New York, the District of Columbia, and Florida soon after the events of September 11, 2001. These packages contained bacillus anthracis, commonly known as anthrax. The bioterrorism attacks killed five people and caused seventeen additional casualties. The Federal Bureau of Investigation (FBI) officially closed the case in 2010 and cited that Dr. Bruce Ivens acted alone in these attacks.

### **2. January 2002—Charles Bishop**

Fifteen-year-old Charles Bishop intentionally crashed a Cessna airplane into a Tampa office building. Bishop acted alone and committed suicide in the attack. No additional casualties occurred. A note retrieved from the plane wreckage indicated that Bishop sympathized with al Qaeda and Osama bin Laden.

### **3. April-May 2002—Lucas John Helder**

Lucas John Helder was indicted by a grand jury for planting eighteen pipe bombs in five states over a five-day period. Six of the bombs exploded and injured six total people. Helder had penned a politically fueled manifesto prior to commencing the attacks.

### **4. July 2002—Hesham Mohamed Hadayet**

Hesham Mohamed Hadayet opened fire in Los Angeles International Airport on July 4, 2002 near the ticket counter for Israel's El Al Airlines. Three people were killed and four others were injured by the attacks. Authorities shot and killed Hadayet at the scene.

**5. October 2002—Steve Kim**

Postal worker Steve Kim fired seven shots at the United Nations to physically protest North Korea's treatment of its citizens.

**6. March 2003—Dwight Watson**

Dwight Watson drove a tractor into a pond near the National Mall in the District of Columbia on March 17, 2003 and made bomb threats. No functional explosive device was found on Watson on March 19 when he was apprehended. The act of terrorism was due to Watson's views on current policies affecting farmers in America.

**7. March 2003—Eid Elwirelwir**

Eid Elwirelwir, a United States citizen born in Venezuela, intentionally rammed his vehicle into March Air Reserve Base in California in order to protest America's involvement in the Middle East. Elwirelwir also sympathized with Saddam Hussein and indicated that he was oppressed as a Muslim living in America.

**8. October-November 2003—Unknown ("Fallen Angel")**

Two letters containing the bioterrorism agent ricin were found in October and November 2003. Both were authored under the pseudonym "Fallen Angel" and expressed concerns over truck driver regulations. One letter was addressed to the Department of Transportation and a second was addressed to the White House. There were no casualties in this attack.

**9. November 2003—Stephen John Jordi**

The FBI arrested Stephen John Jordi on November 11, 2003 after purchasing the components of an explosive device. Jordi planned to detonate the bombs on site at numerous abortion clinics. He was apprehended after discussing the plan with an FBI informant.



**10. February 2004—Unknown**

A suspicious letter that tested positive for ricin was received at the office of Senator Bill Frist. There were no casualties caused by the toxin. Although this case is similar to the “Fallen Angel” letters in late 2003, authorities have not found any link in the cases.

**11. October 2004—Demetrius Van Crocker**

Demetrius Van Crocker attempted to purchase C-4 plastic explosives and sarin nerve agent from an arms dealer in October 2004. Van Crocker plotted to blow up a government courthouse before an undercover agent caught him.

**12. October 2004—Ivan Braden**

The FBI Ivan Braden arrested for plotting to bomb Lenoir City’s National Guard Armory and a Jewish synagogue in the area. Braden had multiple guns and explosive devices and held racist beliefs. He was recently discharged from the National Guard due to his erratic behavior.

**13. May 2005—Unknown**

Two small explosions occurred outside of a building housing the British Consulate in New York City on May 5, 2005. The blasts took place during Great Britain’s polling for the general election. No one was injured in the explosions. Security camera footage showed a lone bicyclist fleeing the scene directly before the blasts.

**14. September 2005—Mahmoud Maawad**

Mahmoud Maawad was living in the United States illegally for six years prior to his arrest in September 2005. Maawad had purchased pilot gear, instructional videos, and flight books over the Internet and had plotted to use an airplane as a weapon. Maawad was reported to the FBI by a pilot shop after he attempted to buy \$3,300 worth of pilot gear.

**15. December 2005—Michael Curtis Reynolds**

Michael Curtis Reynolds was arrested, and later convicted, of attempting to provide material support to al Qaeda. Reynolds plotted to blow up oil pipelines and refineries.

**16. March 2006—Mohammed Reza Taheri-azar**

A University of North Carolina (UNC) graduate was charged with nine counts of attempted murder after driving an automobile through a crowd of people on campus at UNC. The twenty-two year old Iran native told investigators that he wanted to “avenge the deaths or murders of Muslims around the world.” The attack produced nine casualties with minor injuries.

**17. June 2006—Robert Weiler**

Robert Weiler was sentenced to five years in prison for possessing a pipe bomb and a firearm and attempting to destroy an abortion clinic. Weiler had planned to shoot doctors who provided abortions and bomb a clinic in Greenbelt, Maryland.

**18. July 2006—Naveed Afzkal Haq**

Naveed Afzkal Haq opened fire with a handgun at the offices of the Jewish Federation of Greater Seattle. The Muslim man acted alone and chose to attack due to his negative sentiments towards Israel. Haq killed one woman and wounded five others.

**19. September 2006—David Robert McMenemy**

David Robert McMenemy attempted to burn down a women’s health clinic that he believed was an abortion clinic. McMenemy filled a bottle with gasoline and tried to explode the bottle in the lobby of the clinic; however, the building’s sprinkler systems mitigated the flame.

**20. December 2006—Derrick Shareef**

Derrick Shareef was arrested as he attempted to purchase grenades and a handgun from an undercover FBI agent. Shareef planned to attack government buildings and an area shopping center.

**21. March 2007—Andrew Spencer**

A Rikers Island, New York prison inmate attempted to orchestrate a plot to hire a hitman to kill New York City police commissioner Raymond Kelly and bomb police headquarters. This plot has been linked indirectly as retaliation for the Sean Bell shooting in New York City.

**22. April 2007—Paul Ross Evans**

Paul Ross Evans attempted to detonate a bomb outside of the Austin Women's Health Center. The bomb did not detonate because the triggering wire did not make contact with any explosive material. Law enforcement found the bomb after receiving a call regarding a suspicious package outside of the center.

**23. September 2007—Houssein Zorkot**

Houssein Zorkot was arrested in Hemlock Park in Detroit, Michigan wearing camouflage and carrying an AK-47 assault rifle. Zorkot sympathized with the terrorist group Hizballah and maintained a website with terrorist messages and ideals.

**24. October 2007—Unknown**

Two hand grenades that had been fashioned into pipe bombs were thrown outside the Mexican Consulate in New York City on October 26, 2007. This attack was similar to the March 5, 2005 attack on the British Consulate. The blast destroyed windows on the building, but did not cause any casualties.

**25. March 2008—Unknown**

An armed forces recruiting station in Times Square in New York City was hit with an improvised explosive on March 6, 2008. The blast was similar to the October

2007 attack on the Mexican Consulate and the March 2005 attack on the British Consulate. Security cameras had footage of a lone bicyclist fleeing the scene just prior to the attack.

**26. January 2008—Michael S. Gorbey**

Explosives were found in the impounded truck of Michael Gorbey after he was arrested on Capitol Hill for carrying a loaded shotgun. He was indicted for attempting to detonate a weapon of mass destruction by the federal government.

**27. July 2008—Jim Adkisson**

Jim Adkisson opened fire at a Unitarian church in Tennessee. He was motivated to attack because of the church's liberal policies. Adkisson killed two people and wounded seven other when he attacked during church service.

**28. August 2008—Timothy Johnson**

Timothy Johnson fatally shot Arkansas State Democratic Party Chairman Bill Gwatney on August 13, 2008. No clear motive was uncovered and it is not known that the two men had any previous contact.

**29. January 2009—Roderick Robinson**

Roderick Robinson made a bomb threat at a federal building in Oklahoma City that he believed housed the Social Security Administration. Robinson went inside the building and handed a note to a security guard that indicated that there was a bomb in his backpack and outside of the building.

**30. January 2009—Keith Luke**

Keith Luke shot and killed two people and seriously wounded one additional person in a rampage fueled by racism against "non-whites." Luke attacked two sisters and a homeless man and attempted to go to a Jewish synagogue to shoot members as they left.

**31. May 2009—Scott Roeder**

Scott Roeder shot and killed Dr. George Tiller, a physician that provided abortions in his practice. Roeder admitted committing the crime in order to “save the lives of unborn children.”

**32. June 2009—Abdulahakim Mujahid Muhammed**

American-born, Muslim convert Abdulhakim Mujahid Muhammed carried out a deadly shooting in front of a Little Rock, Arkansas military recruiting station on June 1, 2009. Muhammed committed the terrorist act to protest the U.S. military and “what they had done to Muslims in the past.”

**33. June 2009—James Wenneker Von Brunn**

James Von Brunn stormed the United States Holocaust Memorial Museum in the District of Columbia on June 10, 2009. Von Brunn shot and killed a security guard in the attack. He had previously expressed racist views, wrote extensively on neo-Nazism, and fervently denied the holocaust.

**34. September 2009—Hosam Maher Husein Smadi**

Hosam Maher Husein Smadi, a Jordanian teenager illegally in the United States, attempted to explode a vehicle-borne bomb outside of Foundation Place in Dallas, Texas. FBI agents arrested Smadi after he attempted to detonate the bomb from a cell phone device. He was originally identified after using extremist websites online.

**35. September 2009—Michael C. Finton**

Michael C. Finton was arrested on September 23, 2009 after attempting to detonate a vehicle bomb at a federal courthouse in Springfield, Illinois. He drove the inactive bomb supplied by the FBI up to the building prior to detonation. Finton had converted to Islam while in prison and was motivated to attack a government building to force American troops out of Muslim lands.

**36. November 2009—Nidal Malik Hasan**

Major Nidal Malik Hasan opened fire on a crowd within the Fort Hood military base in Texas on November 5, 2009. Hasan killed thirteen people and wounded thirty others. Hasan had often visited Islamic extremist websites and had contact with Anwar al-Awlaki, a known extreme Islamist. He sympathized with extremist views and held an anti-war stance.

**37. February 2010—Joseph Stack**

Joseph Stack conducted a suicide attack on an Internal Revenue Service (IRS) building by flying a plane into the building on February 18, 2010. Stack had grievances against the federal government and the IRS that were expressed in a suicide note. Stack's attack killed one other person and wounded thirteen others.

**38. April 2010—Sandlin Matthew Smith**

Sandlin Matthew Smith was the prime suspect of a firebombing attack on a Jacksonville, Florida mosque in April 2010. He eventually was killed in a shootout with law enforcement in May 2011 after authorities received a tip regarding Smith.

**39. June 2010—Mark Krause**

Mark Krause was arrested after he left an explosive device outside of a polling place in Arkansas in June 2010. Krause was accused of planting a bomb made out of a soda can and owning an unregistered firearm.

**40. July 2010—Byron Williams**

Byron Williams engaged California Highway Patrol officers in a shootout after they attempted to cite him for moving violations on July 18, 2010. Williams was en route to attacking the ACLU and the Tides Foundation. He was inspired by Glenn Beck and was attempting to "start a revolution."

**41. July 2010—Paul Rockwood, Jr.**

Paul Rockwood converted to Islam and began following Anwar al-Awlaki's vision of violent jihad against America. Rockwood created a list of individuals to be targeted for assassination and researched explosive techniques.

**42. September 2010—James Lee**

James Lee took three hostages at the Discovery Channel headquarters in Montgomery County, Maryland in September 2010 to raise awareness on environmental issues. Lee had a firearm and metal canisters strapped to his torso. Lee had been demanding a boycott of Discovery Channel since 2008. [evacuated/story?id=11535128](#))

**43. September 2010—Donny Mower**

On September 2, 2010, Donny Mower constructed a Molotov cocktail and threw it through a window of a Planned Parenthood Clinic. The clinic sustained major damage and was closed for two days. Mower had also thrown a brick at a local mosque and placed intimidating signs in front of the mosque a few weeks prior to the attack.

**44. September 2010—Sami Samir Hassoun**

FBI agents arrested Sami Samir Hassoun after placing a backpack he believed contained an explosive device outside of Wrigley Field in Chicago, Illinois. Hassoun attempted to detonate the bomb provided to him by an undercover FBI agent.

**45. October 2010—Farooque Ahmed**

Farooque Ahmed, a Pakistani-born Virginia man, was arrested after plotting to bomb the District of Columbia subway system. Ahmed cased the subway over the course of six months and eventually was arrested by the FBI as they posed as al Qaeda operatives prior to his operationalizing the plan.

**46. November 2010—Mohamed Osman Mohamud**

Mohamed Osman Mohamud was arrested on November 26, 2010 just prior to a well-attended Christmas tree lighting in Portland, Oregon. Mohamud planned to detonate

an explosive device during the ceremony; however, the bomb was supplied by an FBI informant and was rendered inoperable. The arrest was the culmination of a long-term operation led by the FBI.

**47. December 2010—Antonio Martinez**

Antonio Martinez, who prefers to be known as Muhammad Hussain, was arrested on December 8, 2010 after he attempted to detonate a vehicle bomb outside of a Catonsville, Maryland military recruitment center. The FBI provided the bomb. Prior to the plot, Martinez had posted extremist messages and anti-U.S. statements on Facebook.

**48. January 2011—Unknown**

Two small packages, one addressed to Maryland Governor Martin O'Malley and a one addressed to Maryland Secretary of Transportation Beverley Swaim-Staley, ignited in government buildings in January 2011. The incendiary devices were accompanied by a note that expressed the unknown terrorist's displeasure with overhead roadway signs in Maryland that call for motorists to report suspicious activity to authorities. The attacks did not cause any significant casualties.

**49. January 2011—Kevin Harpham**

Kevin Harpham placed a pipe bomb on the route of a Martin Luther King, Jr. Day parade on January 17, 2011 in Spokane, Washington. Harpham was later arrested and charged with attempting to use a weapon of mass destruction. He had previously expressed views consistent with the white supremacy movement.

**50. February 2011—Khalid Ali-M Aldawsari**

The FBI arrested Khalid Ali-M Aldawsari after placing an order for phenol, a toxic chemical that can be used to make an improvised explosive device. The suspicious purchases were tracked and Aldawsari's emails monitored. He had planned to bomb a list of targets including, dams, power plants, military targets, and the residence of former President George W. Bush.



**51. July 2011—Naser Jason Abdo**

Naser Jason Abdo, an absent without leave (AWOL) soldier, was arrested after plotting to assemble explosive devices with the intention of detonating them in a restaurant frequented by Fort Hood, Texas soldiers. Abdo was in possession of a .40 caliber handgun, ammunition, and an *Inspire* magazine article entitled, “Make a bomb in the kitchen of your Mom.”

**52. September 2011—Rezwan Ferdaus**

Rezwan Ferdaus was arrested and charged with plotting an attack on the Pentagon and U.S. Capitol with a remote-controlled airplane filled with C-4 plastic explosives. Ferdaus was supplied the fake explosive by the FBI and arrested prior to operationalizing his plan.

**53. November 2011—Jose Pimentel**

The New York City Police Department Intelligence Division arrested Jose Pimentel in November 2011 after he attempted to build pipe bombs. Pimentel had recently converted to Islam and followed the radical teachings of Anwar al-Awlaki. The case against Pimentel was built by a confidential informant prior to, during, and after he attempted to build the explosive devices.

THIS PAGE INTENTIONALLY LEFT BLANK

## LIST OF REFERENCES

- Ahn, Y., Lehmann, S., Mislove, A., Onnela, J., & Rosenquist, J. (2010). *Pulse of the nation: U.S. mood throughout the day inferred from Twitter*. Retrieved from the Northeastern University College of Computer and Information Science website: <http://www.ccs.neu.edu>
- Al-Suri, A. (2010). The jihadi experience. *Inspire*, Fall 2010.
- Artiga, V. (n.d.). Lone wolf terrorism: What we need to know and what we need to do. Retrieved from TAK-Response website: [http://www.takresponse.com/index/homeland-security/lone-wolf\\_terrorism.html](http://www.takresponse.com/index/homeland-security/lone-wolf_terrorism.html)
- Bazan, E. (2004). Intelligence Reform and Terrorism Prevention Act of 2004: "Lone wolf" amendment to the Foreign Intelligence Surveillance Act. CRS Report for Congress, Washington.
- Beam, L. (1992). Leaderless resistance. *Seditionist*, 12.
- Bergen, P. & Hoffman, B. (2010). Assessing the terrorist threat: A report of the Bipartisan Policy Center's National Security Preparedness Group.
- Bobbitt, P. (2008). *Terror and consent: The wars of the twenty-first century*. New York: Anchor Books.
- Brannan, D., Herren, E., Hoffman, B., & Matthiessen, R. (2004). *Preparing for suicide terrorism: A primer for American law enforcement agencies and officers*. Santa Monica, CA: RAND Corporation.
- Carafano, J. & Zuckerman, J. (2011). 40 terror plots foiled since 9/11: Combating complacency in the long war on terror. *The Heritage Foundation*.
- Confronting the Terrorist Threat to the Homeland: Six Years After 9/11: Hearing before the Committee on Homeland Security and Government Affairs of the United States Senate, September 10, 2007 (testimony of Robert S. Mueller, III, Director, FBI).
- Coogan, T. (2002). *The IRA*. New York: Palgrave.
- Davis, D. (2010) *The Phineas priesthood: Violent vanguard of the Christian identity movement*. Santa Barbara, CA: Praeger.
- "Dominican Authorities Probe U.S. Bomb Plot Suspect." (2011, November 22).

Retrieved from the USA Today website:

<http://www.usatoday.com/news/world/story/2011-11-22/dominican-republic-nyc-bomb-plot/51355016/1>

Enders, W. & Sandler, T. (2005). After 9/11: Is it all different now? *Journal of Conflict Resolution*, 49.

Hewitt, C. (2003). *Understanding terrorism in America: From the Klan to al Qaeda*. London: Routledge.

Hoffman, B. (2006). *Inside terrorism*. New York: Columbia University Press.

Horgan, J. (2005). *The psychology of terrorism*. London: Routledge.

Horgan, J. & Taylor, M. (2001). The making of a terrorist. *Jane's Intelligence Review*.

Hui, & Triandis, H. (1986). Individualism-collectivism: A study of cross-cultural researchers. *Journal of Cross-Cultural Psychology*, 17, 225–248.

Instituut voor Veiligheids-en Crisismanagement. (2007). *Lone-wolf terrorism*.

Integrated Threat Assessment Centre. (2007). “Lone-wolf” attacks: A developing Islamist strategy?

Jasparro, C. (2010). Lone wolf: The threat from independent jihadists. Naval War College.

Jones, S. & Libicki, M. (2008). *How terrorist groups end: Lessons for countering al Qaeda*. Santa Monica, CA: RAND Corporation.

Karson, Samuel. (2001). It exposed America's vulnerability. *Monitor on Psychology*, 32(10), 46. Interview by Bridget Murray.

Krueger, A. & Maleckova, J. (2002). Education, poverty, political violence, and terrorism: Is there a causal connection? NBER Working Paper no. W9074, National Bureau of Economic Research. Cambridge, MA.

Kushner, H. (2003). *Encyclopedia of terrorism*. Thousand Oaks, CA: Sage.

Laqueur, W. (2003). *No end to war: Terrorism in the twenty-first century*. New York: Continuum.

Likar, L. (2011). *Eco-warriors, nihilist terrorists, and the environment*. Santa Barbara, CA: Praeger.

McCauley, C., & Moskalenko, S. (2008). Mechanisms of political radicalization: Pathways toward terrorism. *Terrorism and Political Violence*, 20.

- Moghaddam, F. (2007). From Bongar et al. *The staircase to terrorism: A psychological exploration*. New York: University Oxford Press.
- Sageman, M. (2004). *Understanding terror networks*. Philadelphia: University of Pennsylvania Press.
- Sageman, M. (2008). *Leaderless jihad: Terror networks in the 21st century*. Philadelphia: University of Pennsylvania Press.
- Smith, B. (2008). *A look at terrorist behavior: How they prepare, where they strike*. Washington: National Institute of Justice.
- Spaaij, R. (2010). The enigma of lone wolf terrorism: An assessment. *Studies in Conflict & Terrorism* 33(9), 854–870.
- Spaaij, R. (2012). *Understanding lone wolf terrorism: Global patterns, motivations, and prevention*. New York: Springer.
- Springer, N. (2009). *Patterns of radicalization: Identifying the markers and warning signs of domestic lone wolf terrorists in our midst* (master's thesis). Naval Postgraduate School, Monterey, CA.
- Stern, J. (2004). *Terror in the name of god*. New York: Harper Perennial.
- Terrorist use of the internet for strategic communications: Hearing before the U.S. House, Permanent Select Committee on Intelligence* (2006, p. 6) (written testimony by Dr. Bruce Hoffman, Rand Corporation).
- Thomas, JO. (1999). New face of terror crimes: 'Lone wolf' weaned on hate. Retrieved from The New York Times website:  
<http://www.nytimes.com/1999/08/16/us/new-face-of-terror-crimes-lone-wolf-weaned-on-hate.html?pagewanted=all&src=pm>
- Triandis, H. (1994). *Culture and social behavior*. McGraw-Hill.
- Understanding the Homeland Threat Landscape – Considerations for the 112th Congress: Hearing before the House Committee on Homeland Security*, February 9, 2011 (testimony of Janet Napolitano, Secretary, Department of Homeland Security).
- United States Senate Committee on Homeland Security and Governmental Affairs. (2008). *Violent Islamist Extremism, the Internet, and the Homegrown Terrorist Threat*. Washington, DC.
- United States Senate Committee on Homeland Security and Governmental Affairs. (2011, February). *A Ticking Time Bomb: Counterterrorism Lessons from the U.S. Government's Failure to Prevent the Fort Hood Attack*. Washington, DC.

- Vidino, L. (2010). *Countering radicalization in America*. Washington: United States Institute of Peace.
- War on Terrorism: Hearing before the Select Committee on Intelligence of the United States Senate, February 11, 2003 (testimony of Robert S. Mueller, III, Director, FBI).
- Walt Disney. (Producer), & Gillett, B. (Director). (1933). Three little pigs [Motion picture]. United States: United Artists.
- Wordpress.org. (2004). Americas. Bin Ladin Tape. Aljazeera.net. *Transcript of Osama bin Laden's speech*. Retrieved from <http://www.worldpress.org/Americas/1964.cfm>
- Zimbardo, P. (2004). A situationist perspective on the psychology of good and evil: Understanding how good people are turned into perpetrators. In A. G. Miller (Ed.), *The social psychology of good and evil*. (pp. 21–50) New York: Guilford Press.

## **INITIAL DISTRIBUTION LIST**

1. Defense Technical Information Center  
Ft. Belvoir, Virginia
2. Dudley Knox Library  
Naval Postgraduate School  
Monterey, California
3. Robert Josefek, PhD  
Naval Postgraduate School  
Monterey, California
4. Paul Jonathan Smith  
Naval Postgraduate School  
Monterey, California